

SONY®

DIGITAL MULTI EFFECTS

DME-3000/7000

DME CONTROL PANEL

BKDM-3010

BKDM-3020

BKDM-3021

BKDM-3022

BKDM-3023

BKDM-3030

BKDM-3040

BKDM-3050

BKDM-3060

BKDM-7031

BKDM-7041

BKDM-7060

BKDM-7070

BZDM-3010

BZDM-3020

BZDM-7010

BZDM-7020

MAINTENANCE MANUAL Part 1

1st Edition

警告

このマニュアルは、サービス専用です。

お客様が、このマニュアルに記載された設置や保守、点検、修理など行くと感電や火災、人身事故につながる可能性があります。

危険をさけるため、サービストレーニングを受けた技術者のみご使用ください。

WARNING

This manual is intended for qualified service personnel only.

To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.

Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegebenen Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

AVERTISSEMENT

Ce manuel est destiné uniquement aux personnes compétentes en charge de l'entretien. Afin de réduire les risques de décharge électrique, d'incendie ou de blessure n'effectuer que les réparations indiquées dans le mode d'emploi à moins d'être qualifié pour en effectuer d'autres. Pour toute réparation faire appel à une personne compétente uniquement.

DME-3000	Serial No. 10001 and Higher
DME-7000	Serial No. 10001 and Higher
BKDM-3010	Serial No. 10001 and Higher
BKDM-3020	Serial No. 10001 and Higher
BKDM-3021	Serial No. 10001 and Higher
BKDM-3022	Serial No. 10001 and Higher
BKDM-3023	Serial No. 10001 and Higher
BKDM-3030	Serial No. 10001 and Higher
BKDM-3040	Serial No. 10001 and Higher
BKDM-3050	Serial No. 10001 and Higher
BKDM-3060	Serial No. 10001 and Higher
BKDM-7031	Serial No. 10001 and Higher
BKDM-7041	Serial No. 10001 and Higher
BKDM-7060	Serial No. 10001 and Higher
BKDM-7070	Serial No. 10001 and Higher
BZDM-3010	Serial No. 10001 and Higher
BZDM-3020	Serial No. 10001 and Higher
BZDM-7010	Serial No. 10001 and Higher
BZDM-7020	Serial No. 10001 and Higher

Table of Contents

Manual Structure

Purpose of this manual	5 (E)
Contents	5 (E)
Related manuals	5 (E)

1 Installation

1-1. Operating Environment	1-1 (E)
1-2. Power Supply	1-1 (E)
1-2-1. Power Specifications	1-1 (E)
1-2-2. Power Cord	1-1 (E)
1-3. Connectors	1-2 (E)
1-3-1. DME-3000/7000	1-2 (E)
1-3-2. BKDM-3010	1-2 (E)
1-4. Input and Output Signals of Connectors	1-3 (E)
1-4-1. DME-3000/7000	1-3 (E)
1-4-2. BKDM-3010	1-6 (E)
1-5. External Dimensions and Installation Space	1-8 (E)
1-5-1. DME-3000/7000	1-8 (E)
1-5-2. BKDM-3010	1-10 (E)
1-6. Installation of Track Ball	1-11 (E)
1-7. Rack Mounting	1-11 (E)
1-8. Switch Settings on Boards and LEDs Description	1-14 (E)
1-8-1. DME-3000/7000	1-14 (E)
1-8-2. BKDM-3010	1-17 (E)
1-8-3. BKDM-3030	1-17 (E)
1-8-4. BKDM-3040	1-20 (E)
1-8-5. BKDM-7070	1-23 (E)
1-9. Installation of Standard Boards	1-26 (E)
1-9-1. DME-3000	1-27 (E)
1-9-2. DME-7000	1-28 (E)
1-10. Installation of Optional Boards	1-29 (E)
1-10-1. MPU-72 Board (BKDM-3030) Installation	1-29 (E)
1-10-2. MPU-80 Board (BKDM-7031) Installation	1-30 (E)
1-10-3. WKG-16 Board (BKDM-7041) Installation	1-30 (E)
1-11. Confirmation of Secondary Power Supply Voltage	1-31 (E)
1-12. Multi Channel Setting	1-33 (E)
1-13. Connection when Combiner Board Installation	1-34 (E)

1-14.	Switch Setting when Connecting Other Equipments	1-35 (E)
1-14-1.	Connection with Digital Video Switcher	1-35 (E)
1-14-2.	Connection with Source Selector Unit	1-35 (E)
1-14-3.	Connection with Video Routing Switcher	1-36 (E)
1-15.	Hard Reset of Control Panel	1-37 (E)
1-16.	Installation of Software	1-38 (E)
1-16-1.	DME-3000	1-38 (E)
1-16-2.	DME-7000	1-38 (E)
1-16-3.	BKDM-3010	1-39 (E)

2 DME-3000/7000 Service Overview

2-1.	Removal from Rack	2-1 (E)
2-2.	Removal of Cabinet	2-1 (E)
2-3.	Cleaning of Front Panel	2-2 (E)
2-4.	Location of Main Parts	2-3 (E)
2-5.	Replacement of Main Parts	2-3 (E)
2-5-1.	Power Supply Unit	2-3 (E)
2-5-2.	Fan Motor	2-4 (E)
2-5-3.	Backup Battery (only DME-3000)	2-5 (E)
2-5-4.	Capacitor for Data Backup (only DME-7000)	2-5 (E)
2-6.	Location of Printed Circuit Boards	2-6 (E)
2-6-1.	DME-3000	2-6 (E)
2-6-2.	DME-7000	2-8 (E)
2-7.	Replacement of Plug-in Boards	2-10 (E)

3 BKDM-3010 Service Overview

3-1.	Cleaning of Track Ball	3-1 (E)
3-2.	Removal of Bottom Plate	3-2 (E)
3-3.	Location of Main Parts	3-2 (E)
3-4.	Replacement of Main Parts	3-3 (E)
3-4-1.	Floppy Disk Drive	3-3 (E)
3-4-2.	Key Top	3-3 (E)
3-4-3.	Backup Battery	3-4 (E)
3-5.	Replacement of Printed Circuit Boards	3-4 (E)
3-5-1.	CPU-119 Board	3-4 (E)
3-5-2.	KEY-32A Board	3-5 (E)
3-5-3.	KEY-32B Board	3-5 (E)
3-5-4.	KEY-32C Board	3-6 (E)
3-5-5.	SE-214 Board	3-6 (E)

4 Trouble Shooting

4-1.	Trouble Shooting	4-1 (E)
4-1-1.	DME-3000/7000	4-1 (E)
4-1-2.	BKDM-3010	4-3 (E)
4-2.	Self Diagnostics	4-4 (E)
4-2-1.	BKDM-3010 (Menu 804 page)	4-4 (E)

5 Overall Block Diagrams

5-1.	Circuit Function of Printed Circuit Boards	5-1
5-1-1.	DME-3000	5-1
5-1-2.	DME-7000	5-1
5-1-3.	BKDM-3010	5-1
5-2.	Overall Block	5-2
5-2-1.	DME-3000	5-2
5-2-2.	DME-7000	5-3
5-2-3.	BKDM-3010 (CPU-119 board)	5-4

Manual Structure

Purpose of this manual

This manual is the maintenance manual of the digital multi effects DME-3000/7000 and the control panel BKDM-3010.

This manual is intended for use by trained system and service engineers, and describes the information of installation and the information on primary service.

Contents

The following is a summary of all the sections for understanding the contents of this manual.

Section 1 Installation

Explains the operating environment, the connector information for peripheral equipment connections and the switches on the board for system setup.

Section 2 DME-3000/7000 Service Overview

Explains the removal of processor's cabinet and how to replace the main parts.

Section 3 BKDM-3010 Service Overview

Explains how to replace the main parts of the control panel.

Section 4 Trouble Shooting

Explains the trouble shooting and diagnosis of DME-3000/7000 and optional boards.

Section 5 Overall Block Diagrams

Describes the circuit function of the printed circuit boards and the overall block diagrams.

As for the block diagrams for every circuit block refer to the Maintenance Manual Part 2.

Related manuals

Besides this Maintenance Manual Part 1, the following manuals are available for DME-3000/7000.

- **Operation Manual (Supplied with DME-3000/7000.)**

This manual explains the overview of DME-3000/7000 and optional boards, and the system configuration examples.

- **User's Guide (Supplied with the optional software BZDM-3020/7020.)**

This guide explains how to use the control panel to operate the processor.

- **Maintenance Manual Part 2 (Not supplied with DME-3000/7000.)**

This manual describes the information (adjustments, board layouts, schematic diagrams, parts list, etc.) that premise the service based on parts.

If this manual is required, please contact to Sony's service organization.

Section 1

Installation

1-1. Operating Environment

WARNING

Avoid placing or using this unit where it will be exposed to greasy fumes, steam, dampness and dust environments. If placing or using this unit in these environments, it may cause a fire and an electric shock.

- The operating temperature is 5 °C to 40 °C.
Do not install this unit near heat sources.
- To prevent a temperature rise inside the unit, pay careful attention to circulation of air in the place where the unit is installed.
Do not block the ventilation holes on the outer cabinet.

1-2. Power Supply

1-2-1. Power Specifications

Power requirements: 100 to 240 V AC \pm 10%
50/60 Hz

Current consumption: 4.0 A maximum
(with all optional boards installed)

A switching regulator is used for the power supply of this unit. The voltage within the range of 100 V to 240 V can be used without changing the supply voltage.

Note

As the inrush current at turn-on is the maximum 25 A, the capacity of the AC power must be commensurate in it with the inrush current of the maximum 25 A.

If the capacity of the AC power is not the adequately large, the breaker of the AC power at the supply side will operate or the unit will abnormal operate.

1-2-2. Power Cord

WARNING

To avoid a fire or an electric shock, be sure to use the designated power cord.
And do not damage to the power cord.

DME-3000

Be sure to use the power cord that is supplied with DME-3000.

DME-7000

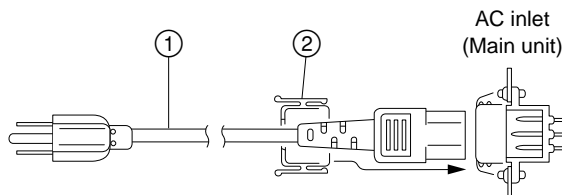
The power cord is not supplied with DME-7000.

Be sure to use the power cord that is applicable to the places in the world.

For the customer in the U.S.A. and Canada

Required Parts

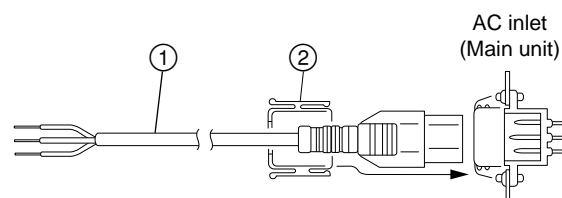
- ① Power Cord, 125 V 10 A (2.4m) : DK-2401
- ② Plug Holder(Black) : 2-990-242-01



For the customer in the United Kingdom

Required parts

- ① Power Cord, 250 V 10 A (2.5m) : 1-590-910-11
- ② Plug Holder (Grey) : 3-170-078-01



Note

For the customer outside of the area as shown above, please consult with local Sony's sale/service office.

1-3. Connectors

When connecting cables to various connectors on the rear panel at the time of installing or servicing, connect the following connectors or their equivalents.

1-3-1. DME-3000/7000

Connector function name on the rear panel	Connector name and part number of matching cable
DIGITAL INPUTS	BNC connector
DIGITAL OUTPUTS	1-560-009-00
ANALOG INPUTS	
ANALOG OUTPUTS	
COMBINER INPUTS	
COMBINER OUTPUTS	
REF INPUT	
CONTROL PANEL	D-SUB 25P, MALE CONNECTOR 25P, MALE 1-560-904-11 JUNCTION SHELL 25P 1-563-377-11
GPI	D-SUB 15P, MALE CONNECTOR 15P, MALE 1-564-600-11 JUNCTION SHELL 15P 1-563-376-11
CONTROL PANEL	D-SUB 9P, MALE
EDITOR	CONNECTOR 9P, MALE
AUX	1-560-651-00
SWITCHER PANEL	JUNCTION SHELL 9P
TERMINAL ^(*)	1-561-749-00
NETWORK ^(*)	TRANSCEIVER CABLE 1-559-701-11 or MICRO TRANSCEIVER CABLE Allied Telesis Centre COM TM ^(*) MX10S

(*) : DME-7000 only

(*) : Centre COM is a trademark of Allied Telesis Corporation.

1-3-2. BKDM-3010

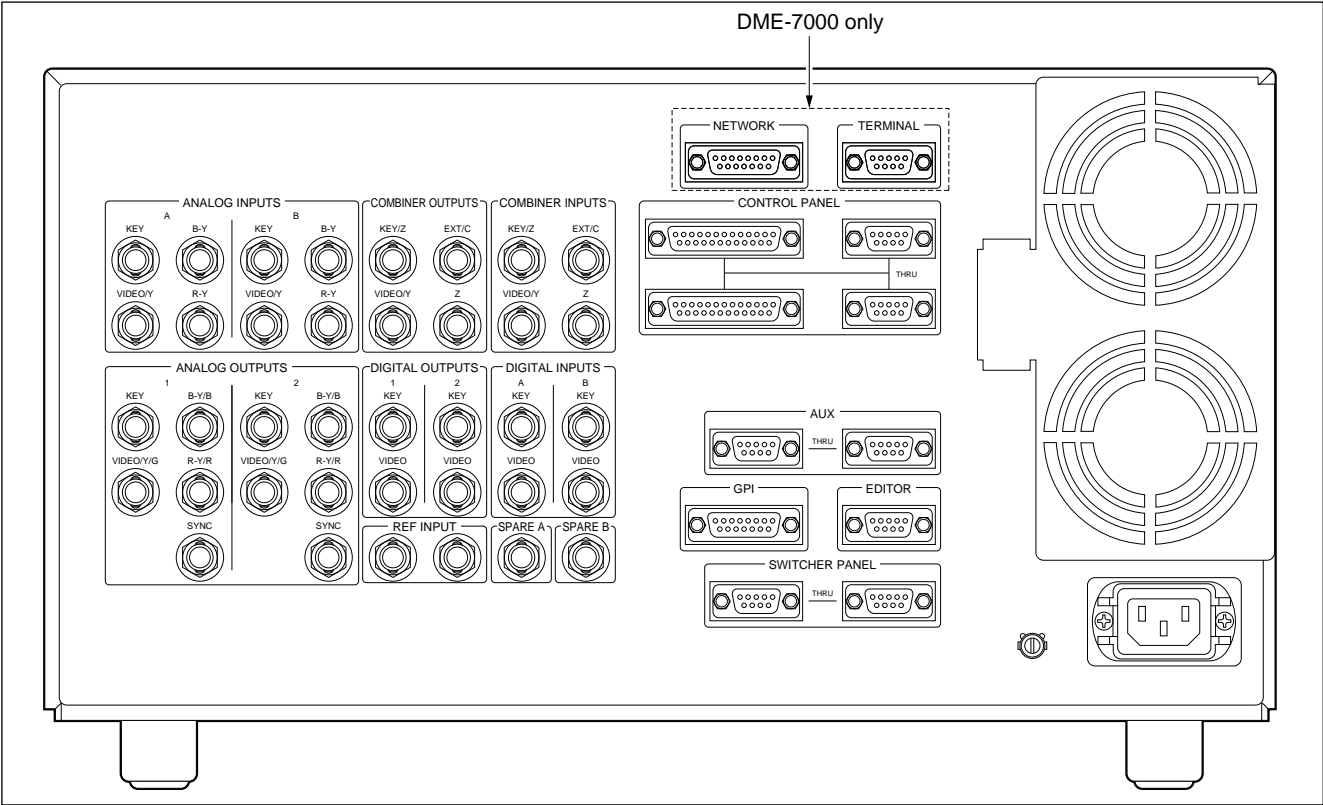
Connector function name on the rear panel	Connector name and part number of the matching cable
PROCESSOR	D-SUB 25P, MALE CONNECTOR 25P, MALE 1-560-904-11 JUNCTION SHELL 25P 1-563-377-11
MONITOR	Supplied with a CPD-15SF2
SPARE	A PCY-330 or a Microsoft [®] ^(*) Mouse

(*) : Microsoft is a registered trademark of Microsoft Corporation.



1-4. Input and Output Signals of Connectors

1-4-1. DME-3000/7000



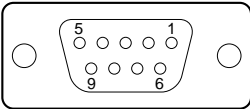
DIGITAL INPUTS
ANALOG INPUTS
COMBINER INPUTS
REF INPUT
DIGITAL OUTPUTS
ANALOG OUTPUTS
COMBINER OUTPUTS

BNC connector, 75 Ω
termination

Note

[CONTROLLER] indicates a controlling device.
[DEVICE] indicates a controlled device.

CONTROL PANEL : RS-422A (D-sub 9-pin)
[DEVICE] from Control Panel BKDM-3010 etc.

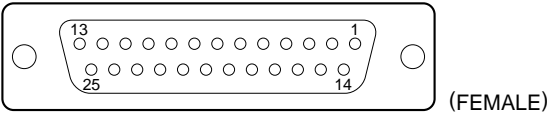


(FEMALE)

Pin No.	Signal	Function
1	FG	Frame ground
2	TX-A	Transmitted data (-)
3	RX-B	Received data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	TX-B	Transmitted data (+)
8	RX-A	Received data (-)
9	FG	Frame ground

CONTROL PANEL : RS-422A (D-sub 25-pin)

[DEVICE] from Control Panel BKDM-3010 etc.

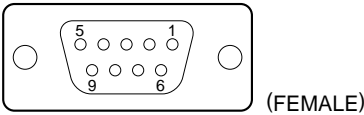


— EXT VIEW —

Pin No.	Signal	Function
1	FG	Frame ground
2	POWER	Power supply (+12 V)
3	TX-A	Transmitted data (–)
4	GND	Common ground
5	RX-A	Received data (–)
6	—	—
7	—	—
8	—	—
9	VD-A	Transmitted VD signal (–)
10	—	—
11	—	—
12	GND	Common ground
13	GND	Common ground
14	POWER	Power supply (+12 V)
15	POWER	Power supply (+12 V)
16	TX-B	Transmitted data (+)
17	GND	Common ground
18	RX-B	Received data (+)
19	—	—
20	—	—
21	—	—
22	VD-B	Transmitted VD signal (+)
23	—	—
24	—	—
25	FG	Frame ground

EDITOR : RS-422A (D-sub 9-pin)

[DEVICE] from Editing Control Unit BVE-2000 etc.

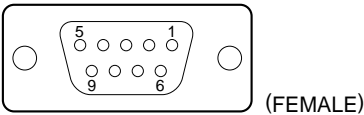


— EXT VIEW —

Pin No.	Signal	Function
1	FG	Frame ground
2	TX-A	Transmitted data (–)
3	RX-B	Received data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	TX-B	Transmitted data (+)
8	RX-A	Received data (–)
9	FG	Frame ground

SWITCHER PANEL : RS-422A (D-sub 9-pin)

[DEVICE] from Switcher Control Panel BKDS-7011/
7021/7022 etc.

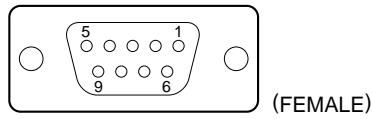


— EXT VIEW —

Pin No.	Signal	Function
1	FG	Frame ground
2	TX-A	Transmitted data (–)
3	RX-B	Received data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	TX-B	Transmitted data (+)
8	RX-A	Received data (–)
9	FG	Frame ground

AUX : RS-422A (D-sub 9-pin)

[CONTROLLER] from Digital Video Switcher DVS-7000 etc.



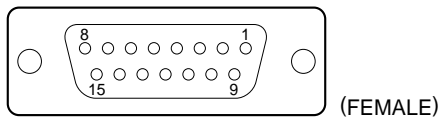
— EXT VIEW —

Pin No.	Signal	Function
1	FG	Frame ground
2	RX-A	Received data (-)
3	TX-B	Transmitted data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	RX-B	Received data (+)
8	TX-A	Transmitted data (-)
9	FG	Frame ground

GPI : (D-sub 15-pin)

INPUT × 4, TTL

OUTPUT × 4, relay contact 30 V 0.1 A (resistance load)



— EXT VIEW —

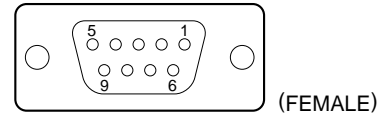
Pin No.	Signal	Function
1	GND	Ground
2	GPI OUT 1B	General-purpose relay output (B) (*1)
3	GPI OUT 2B	
4	GPI OUT 3B	
5	GPI OUT 4B	
6	GPI IN 1	General-purpose input
7	GPI IN 3	
8	GPI IN COM	Ground
9	GPI OUT 1A	General-purpose relay output (A) (*1)
10	GPI OUT 2A	
11	GPI OUT 3A	
12	GPI OUT 4A	
13	GPI IN COM	Ground
14	GPI IN 2	General-purpose input
15	GPI IN 4	

Note

A and B of same number constitute a pair of relay contacts.

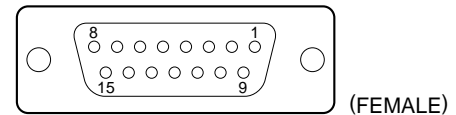
TERMINAL : RS-232C (D-sub 9-pin) (DME-7000 only)

[CONTROLLER] to Terminal



— EXT VIEW —

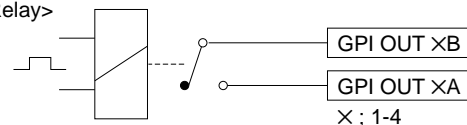
Pin No.	Signal	Function
1	DCD	Data carrier detect
2	RXD	Received data
3	TXD	Transmitted data
4	DTR	Data terminal ready
5	SG	Signal ground
6	DSR	Data set ready
7	RTS	Request to send
8	CTS	Clear to send
9	RI	Ring indicator

NETWORK : 10 BASE 5 (D-sub 15-pin) (DME-7000 only)

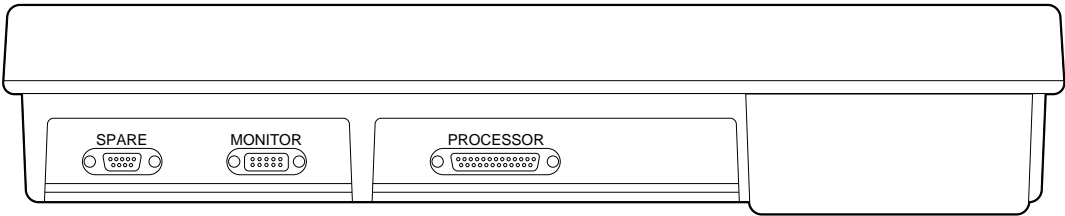
— EXT VIEW —

Pin No.	Signal	Function
1	SHLD	Shield ground
2	CD+	Collision (+)
3	TX+	Transmit (+)
4	—	—
5	RX+	Receive (+)
6	RTRN	Return
7	—	—
8	—	—
9	CD-	Collision (-)
10	TX-	Transmit (-)
11	—	—
12	RX-	Receive (-)
13	+12 V	Power supply +12 V
14	—	—
15	—	—

(*1)<Relay>



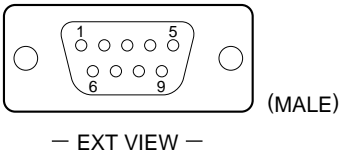
1-4-2. BKDM-3010



Note

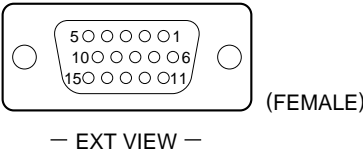
[CONTROLLER] indicates a controlling device.
[DEVICE] indicates a controlled device.

SPARE : RS-232C (D-sub 9-pin)
[CONTROLLER] to Mouse or ISR



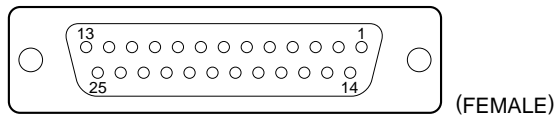
Pin No.	Signal	Function
1	—	—
2	TXD	Transmitted data
3	RXD	Received data
4	DTR	Data terminal ready
5	SG	Signal ground
6	—	—
7	RTS	Request to send
8	—	—
9	—	—

MONITOR : RGB output (D-sub 15-pin • 3 LINES)



Pin No.	Signal	Function
1	R	Red output 0.714 V p-p (± 10%)/75 Ω
2	G	Green output 0.714 V p-p (± 10%)/75 Ω
3	B	Blue output 0.714 V p-p (± 10%)/75 Ω
4	GND	Ground
5	—	—
6	GND	Ground
7	GND	Ground
8	GND	Ground
9	—	—
10	GND	Ground
11	GND	Ground
12	—	—
13	H sync	H sync output (TTL level)
14	V sync	V sync output (TTL level)
15	—	—

PROCESSOR : RS-422A (D-sub 25-pin)
[CONTROLLER] to Digital Multi Effects DME-3000/
7000 etc.



— EXT VIEW —

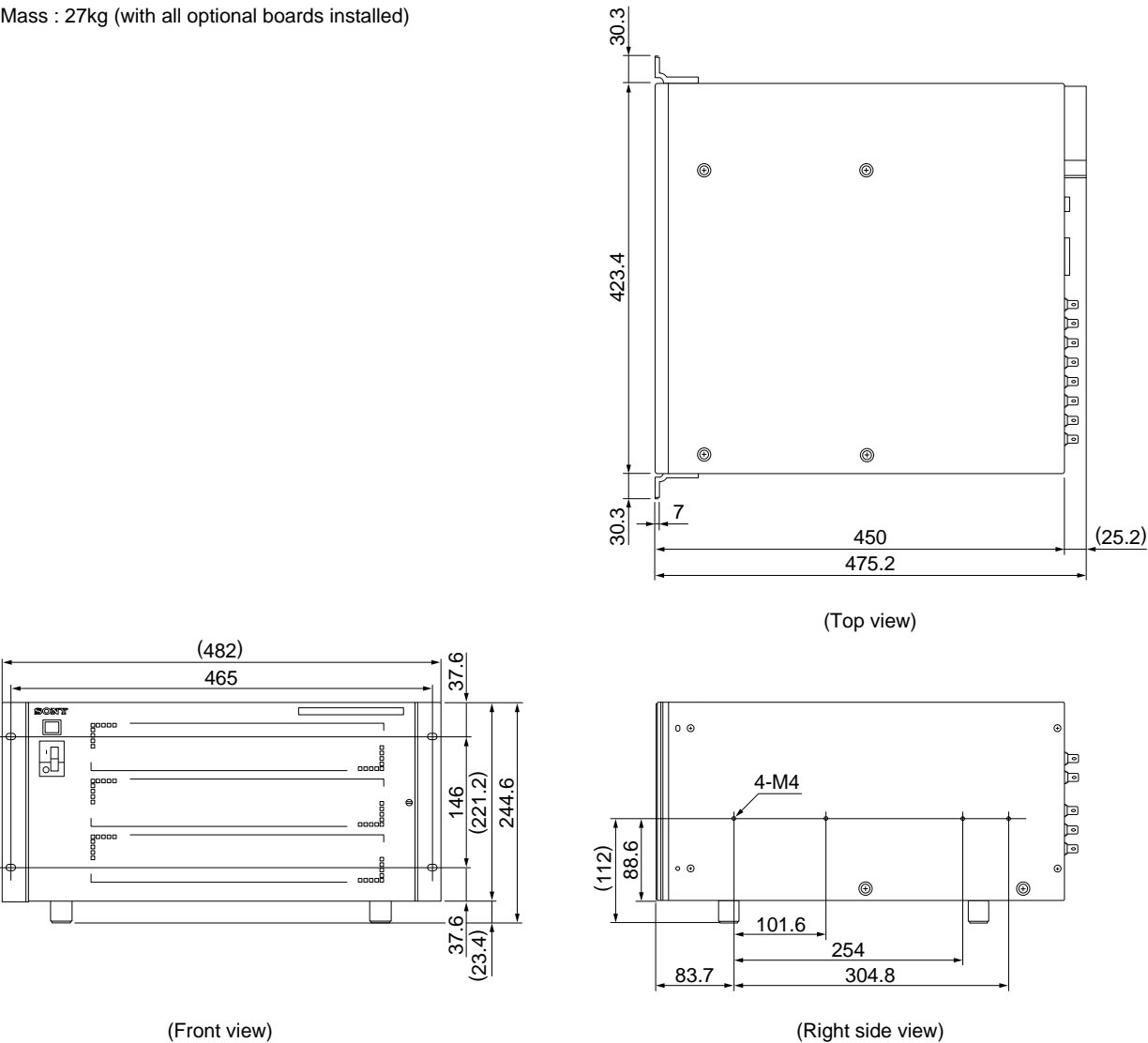
Pin No.	Signal	Function
1	FG	Frame ground
2	POWER	+12 V input
3	RX-A	Received data (–)
4	GND	Common ground
5	TX-A	Transmitted data (–)
6	—	—
7	—	—
8	—	—
9	VD-A	Received VD signal (–)
10	GND	Common ground
11	—	—
12	GND	Common ground
13	GND	Common ground
14	POWER	+12 V input
15	POWER	+12 V input
16	RX-B	Received data (+)
17	GND	Common ground
18	TX-B	Transmitted data (+)
19	—	—
20	—	—
21	—	—
22	VD-B	Received VD signal (+)
23	—	—
24	—	—
25	FG	Frame ground

1-5. External Dimensions and Installation Space

1-5-1. DME-3000/7000

External Dimensions

Mass : 27kg (with all optional boards installed)



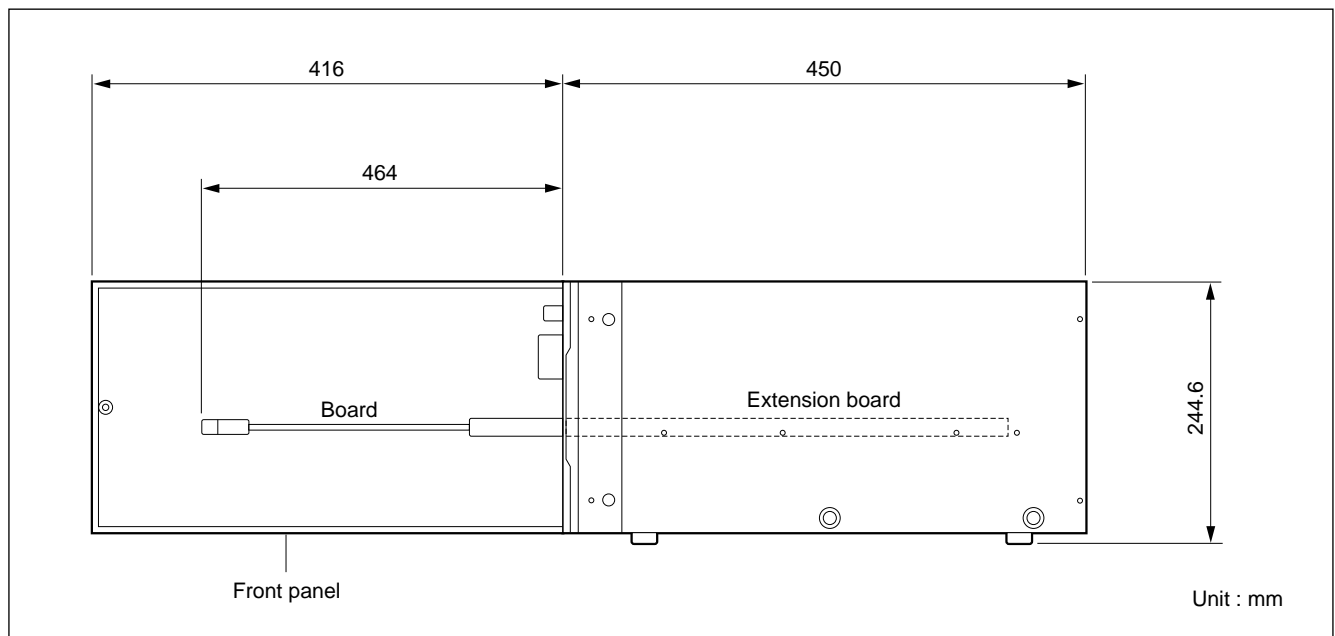
Unit : mm

Installation Space

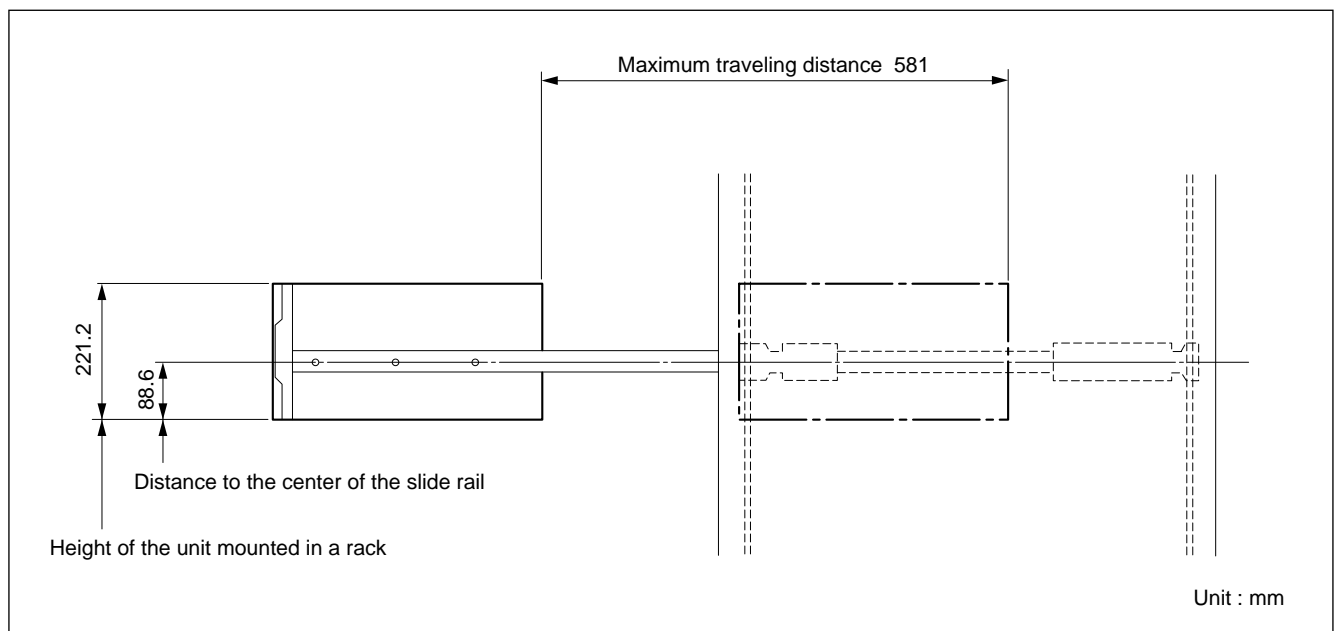
CAUTION

- Be sure to install the unit in a stable place.
If the unit is installed in a wobbly table or a slant surface, the unit may be dropped. This may cause a injury.
- Do not stack the unit.
If the unit is stacked without the use of a rack, the unit may be dropped. This may cause a injury.
- Do not block the ventilation holes on the outer cabinet.

The rear side of the unit should be at least 20 cm away from walls for ventilation and maintenance.

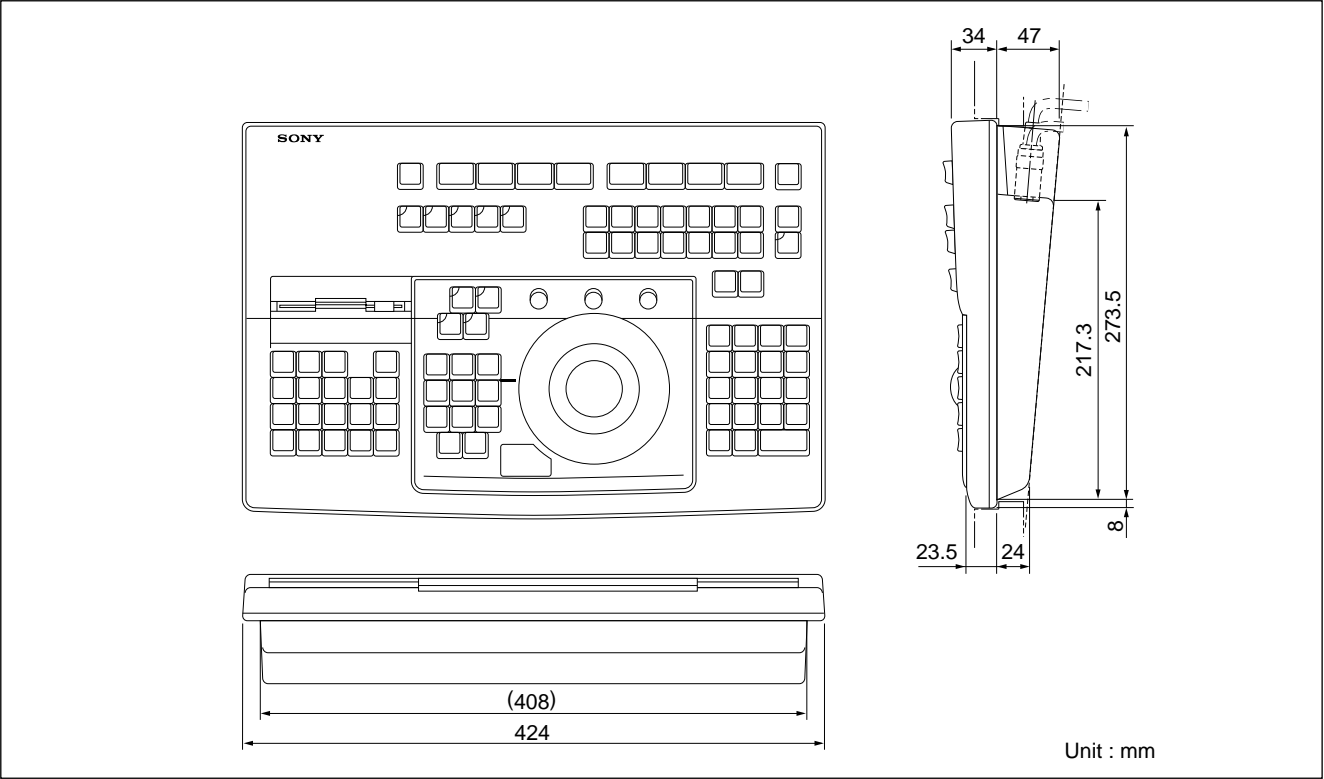


When the unit is mounted in a rack, the maximum traveling distance is illustrated below.



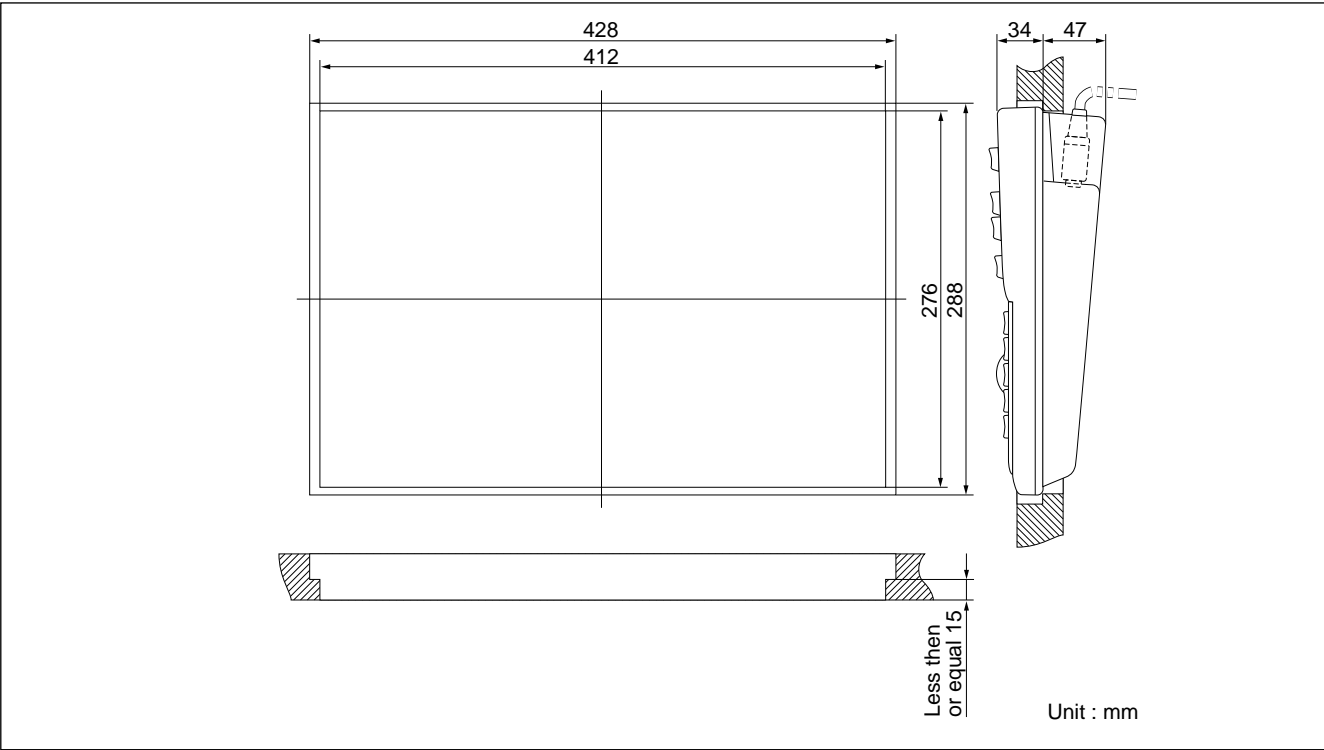
1-5-2. BKDM-3010

External Dimensions



Installation Space

BKDM-3010 can be installed in a console.

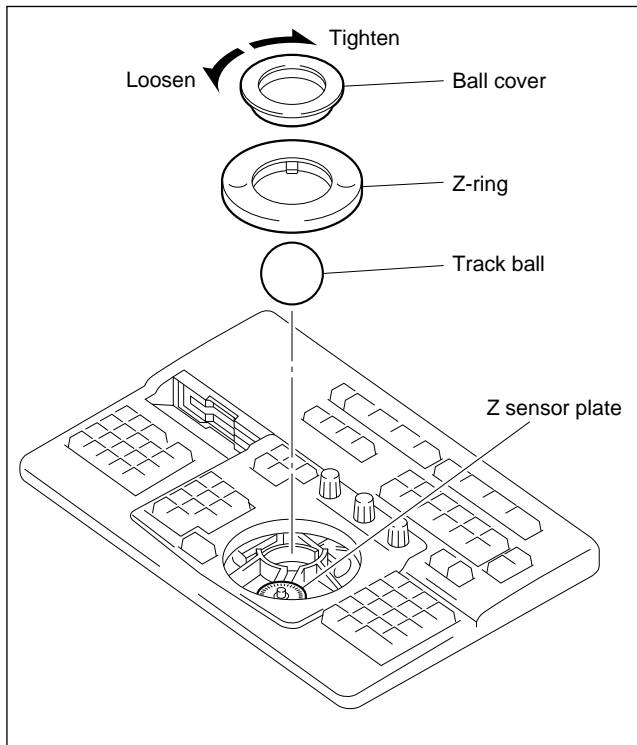


1-6. Installation of Track Ball

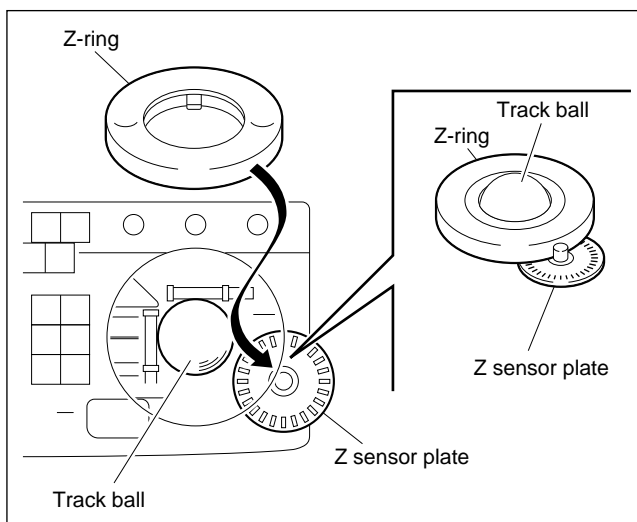
The track ball is not installed in BKDM-3010 at the factory.

Install the track ball according to the following procedures.

1. Turn the ball cover counterclockwise and loosen it, then remove.
2. Catch the Z-ring on a nail, raise it, then remove.
3. Put a track ball in the position shown in the figure.



4. Push in the Z-ring while pressing it against the Z sensor plate.
5. Turn the ball cover clockwise and tighten it.



1-7. Rack Mounting

DME-3000/7000 can be mounted in a 19-inch standard rack.

Note

- If DME-3000/7000 and a peripheral equipment are mounted in a 19-inch standard rack, it is recommended to install a ventilation fan to prevent a temperature rise in the rack.
Make sure that all the units in the rack should be operated within the temperature range of 5 °C to 40 °C.
- Be sure to use the recommended rail when rack mounting. The unit cannot be installed completely to a rack by rack angles alone.
- Be sure to fix the rack to the floor with bolts. When the unit is pulled out from the rack, this will prevent its fall.
- An installation manual is supplied with the rack mount rail RMM-30. However follow the instructions in this maintenance manual. Because the rack mounting procedures of DME-3000/7000 differ somewhat from the procedures explained in RMM-30 installation manual.

[Required parts]

- Rack mount rail (RMM-30)
Rail with bracket: 2 pcs
Screw (B5 × 8): 8 pcs
- Screw for rack mounting (RK5 × 16): 4 pcs
- Washer for rack mounting: 4 pcs
(Sony part number: 2-297-913-01)
- Screw (BVTT4 × 8)*: 6 pcs

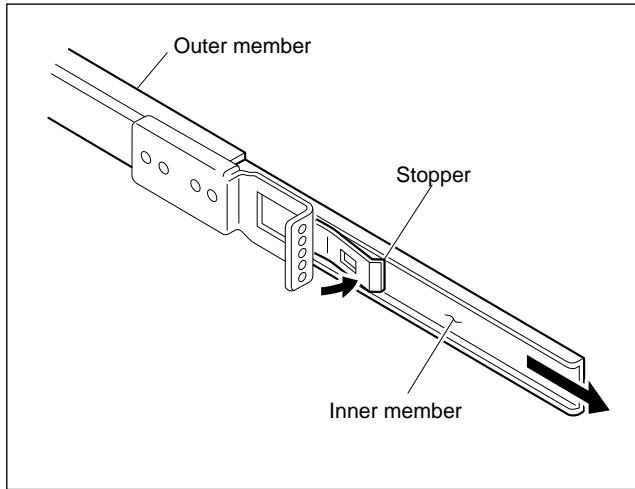
(*) : Supplied with DME-3000/7000.

CAUTION

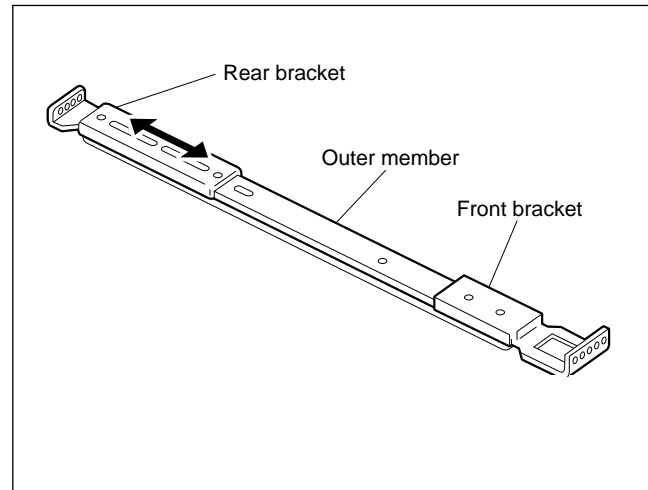
Be sure to use the optional rack mount rail RMM-30. If a rack mount rail not in designation is used, the unit may be dropped by a low strength. This may cause a injury.

[Procedures]

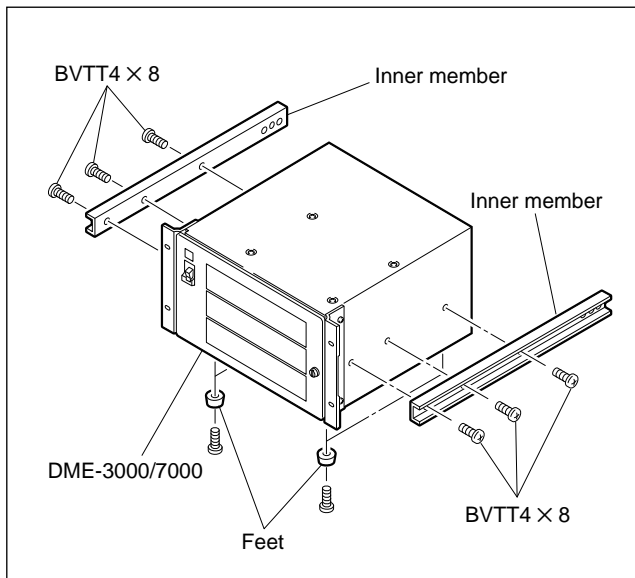
1. Pull out the inner member while pressing the stopper of the rack mount rail RMM-30.



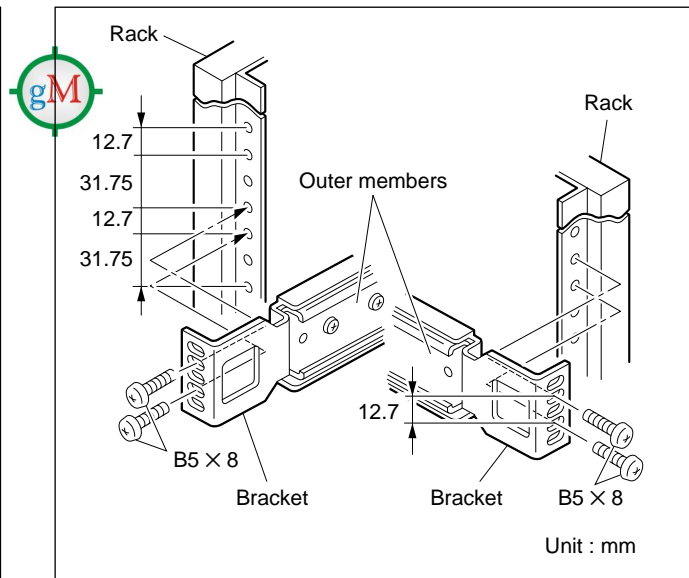
3. Loosen the screws secured the rear bracket to the outer member. Adjust the position of the rear bracket in line with the rack depth.



2. Secure the inner members to the unit by the six screws (BVTT4 × 8) supplied with DME-3000/7000. Remove the feet of the unit as required.



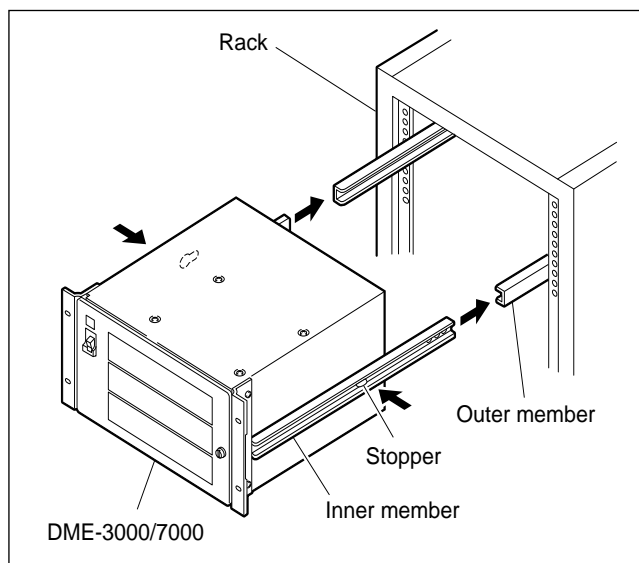
4. Temporarily secure the front and rear brackets to the outside of the rack by the eight screws (B5 × 8) supplied with RMM-30.



- For installing the unit in the rack, press the inner members fully to the outer members while pressing the stoppers of the inner members.

CAUTION

- Be sure to mount the unit in the rack with two-person or more.
Trying to handle this job by a one-person could lead to injury.
- Be careful not to get caught your hand and finger in the rack mount rail when installing the unit in the rack.

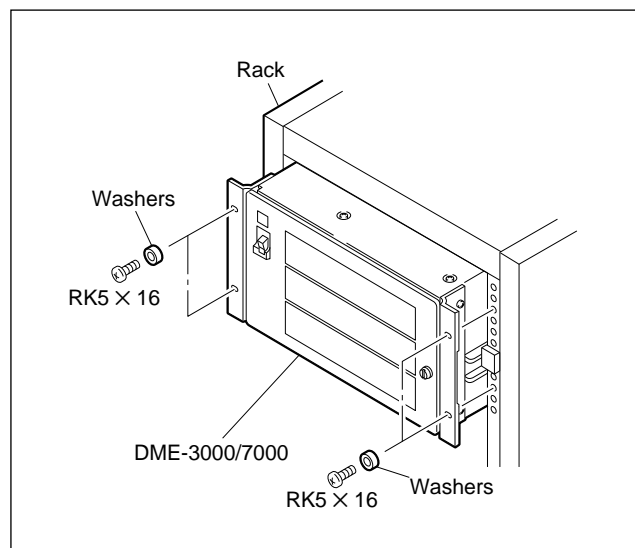


- After confirming that the unit can be moved smoothly, tighten the screws (B5 × 8) secured temporarily in the step 4.

Note

When securing the front brackets to the rack by screws, pull out the unit about 20 cm (8 inches) from the rack, and fasten the screws of the front brackets to the rack.

- After installing the unit in the rack, secure the unit to the rack by the prepared four screws (RK5 × 16) and four washers.



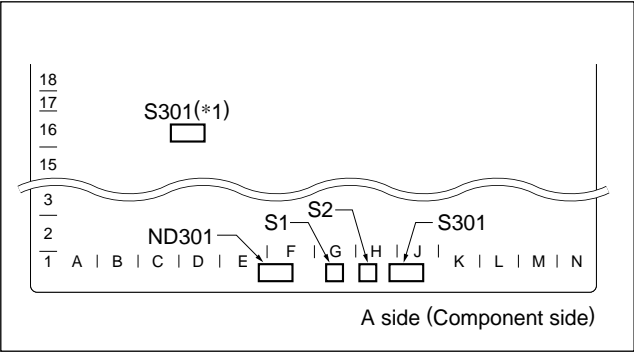
1-8. Switch Settings on Boards and LEDs Description

1-8-1. DME-3000/7000

Note

The addresses on the boards are shown by () marks.

CPU-114 board (DME-3000 only)



(*1) : DME-3000 (serial number 10001 through 10210) only

[Switch]

S1(G-1) : Reset switch

Resets the CPU on the CPU-114 board.

S2(H-1) : Interrupt switch

Executes the interrupt processing so as to receive the communication data from an RS-232C port.

Note

Do not press this switch in normal times.

S301-1(D-16 (*1)/J-1) : Memory clear switch

ON: Erases the key frame data when the power is turned on.

OFF: Backs up the key frame data.

Factory setting: OFF

S301-2(D-16 (*1)/J-1) : Editor protocol selector

Selects the protocol of the D-sub Editor connector on the rear panel.

ON: VTR protocol

OFF: DME protocol
(BVE-9000/9100 + BKE-9009)

Factory setting: OFF

When the software V1.40 or later is installed:

Editor protocol can be set by the setup menu (702 OPERATION).

Mode	POWER ON mode	
	Factory set	User define
When power is turned on	Switch setting takes effect.	Menu setting takes effect.
When protocol is reset by setup menu	Menu setting takes effect.	Menu setting takes effect.

S301-3, 4(D-16 (*1)/J-1):

The functions of these switches depend on installed operating software's version.

S301-3 and S301-4 are set to OFF at the factory.

When the software V1.00 is installed: AUX protocol selector

Selects the protocol of the D-sub AUX connector on the rear panel.

S301-3	S301-4	Selected protocol
OFF	OFF	CART protocol (DVS-V1201, BKDM-5080)
ON	OFF	SWITCHER protocol (DVS-8000/6000/2000 series)
ON	ON	Not used.

When the software V1.11 or later is installed: Factory use

These switches are used for the adjustment in the factory.

AUX protocol can be set by the setup menu (711 SOURCE SELECTOR).

Note

Be sure to set S301-4 to OFF.

S301-5(D-16 ^(*)/J-1) : Factory use

This switch is used for the adjustment in the factory.

Note

Be sure to use this switch for factory setting (OFF).

S301-6(D-16 ^(*)/J-1) : Not used

Factory setting: OFF

S301-7, 8(D-16 ^(*)/J-1) : Physical channel setting switch

Sets the physical channel ^(*).

Physical channel	S301-7	S301-8
CH1	OFF	OFF
CH2	OFF	ON
CH3	ON	OFF
CH4	ON	ON

S301-7 and S301-8 are set to OFF at the factory.

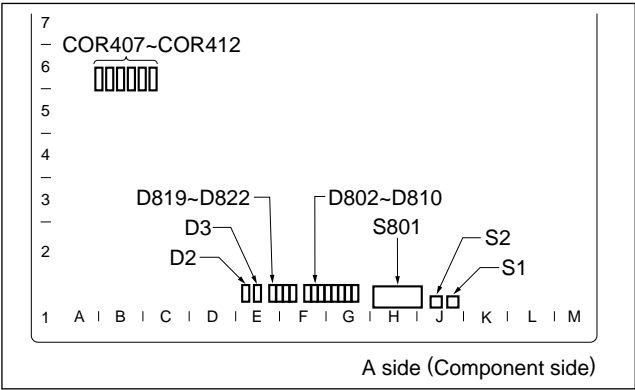
(*) : The physical channel is the number assigned to each processor so that the control panel can discriminate multiple processors.

[LED]

ND301(F-1) : CPU RUN indicator

Displays a numerical indication of the operational state of the CPU.

CPU-196 board (DME-7000 only)



[Switch]

S1(J-1) : Factory use

This switch is used for the adjustment in the factory.

Note

Do not press this switch in normal times.

S2(J-1) : Reset switch

Resets the CPU on the CPU-196 board.

S801-1(H-1) : Memory clear switch

ON: Erases the key frame data when the power is turned on.

OFF: Backs up the key frame data.

Factory setting: OFF

S801-2 through S801-5(H-1) : Factory use

These switches are used for the adjustment in the factory.

Note

Be sure to use these switches for factory setting (OFF).

S801-6 through S801-8(H-1) :
Physical channel setting switch

Sets the physical channel ^{(*)3}.

Physical channel	S801-6	S801-7	S801-8
CH1	OFF	OFF	OFF
CH2	OFF	OFF	ON
CH3	OFF	ON	OFF
CH4	OFF	ON	ON
CH5	ON	OFF	OFF
CH6	ON	OFF	ON
CH7	ON	ON	OFF
CH8	ON	ON	ON

S801-6 through S801-8 are set to OFF at the factory.

(*)3) : The physical channel is the number assigned to each processor so that the control panel can discriminate multiple processors.

COR407(A-6) through COR412(B-6) : Factory use

These switches are used for the adjustment in the factory.

Note

Be sure to use these switches for factory setting (USE).

[LED]

D2 (Green)(E-1) : RUN indicator

Lights during the CPU operation.

D3 (Green)(E-1) : VD indicator

Indicates the existence of VD signal.

Lights when VD signal is normally input to the board.

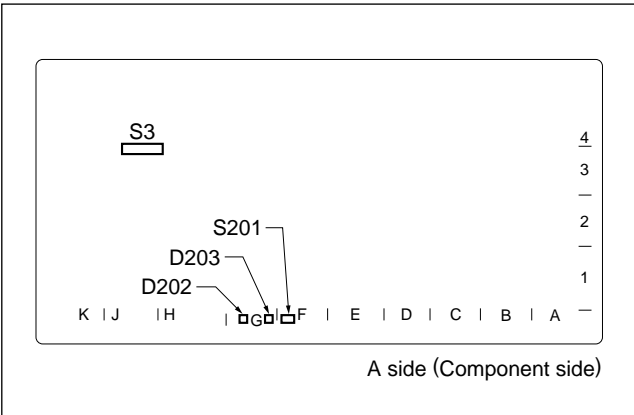
D802(F-1) through D810(G-1) : Factory use

These LEDs are used for the adjustment in the factory.

D819(E-1) through D822(F-1) : Factory use

These LEDs are used for the adjustment in the factory.

MPU-70 board



[Switch]

S3(J-4) : Emulator mode setting switch

Note

Be sure to use this switch for setting at the factory.

Factory setting:

S3-1	S3-2	S3-3	S3-4	S3-5	S3-6	S3-7	S3-8
OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON

S201(F-1) : Reset switch

Resets the CPU on the MPU-70 board.

[LED]

D202 (Green)(G-1) : FD indicator

Blinks whenever CPU interrupt processing is executed in each field.

D203 (Green)(G-1) : RUN indicator

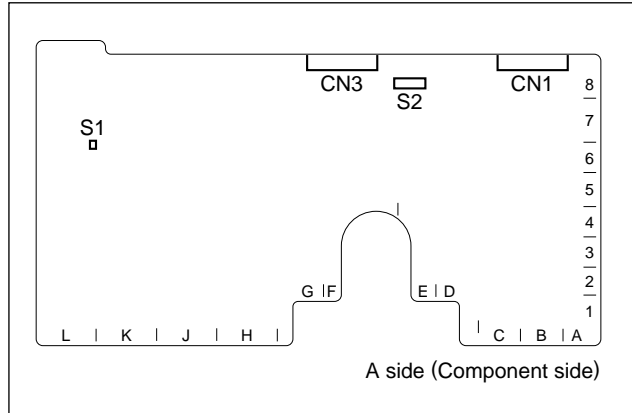
Lights during the CPU operation.

1-8-2. BKDM-3010

Note

The addresses on the board are shown by () marks.

CPU-119 board



[Switch]

S1(L-6) : Reset switch

Resets the CPU on the CPU-119 board.

S2(E-8) : Test switch

Factory setting:

S2-1	S2-2	S2-3	S2-4	S2-5	S2-6	S2-7	S2-8
ON	ON	ON	ON	OFF	OFF	OFF	ON

S2-1 through S2-6(E-8) : CN3 test switch

S2-1: Input RX-A signal to connector CN3.

S2-2: Input RX-B signal to connector CN3.

S2-3: Output TX-A signal from connector CN3.

S2-4: Output TX-B signal from connector CN3.

S2-5: Connect TX-B and RX-B signals internally.
Used for operation check.

S2-6: Connect TX-A and RX-A signals internally.
Used for operation check.

S2-7, 8(E-8) : CN1 test switch

S2-7: Connect TXD and RXD signals internally.
Used for operation check.

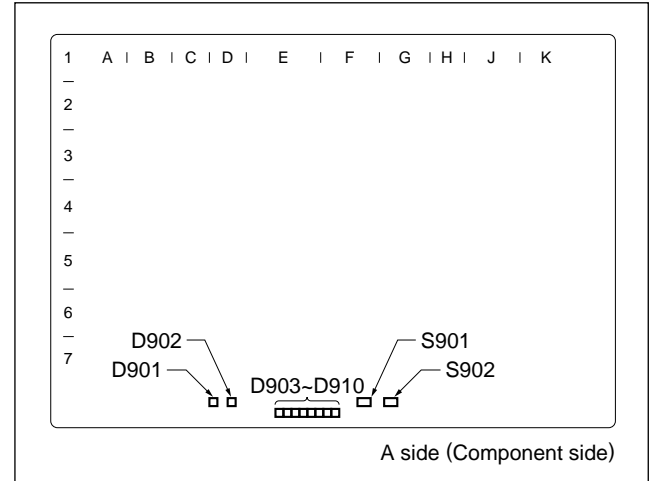
S2-8: Input RXD signal to connector CN1.

1-8-3. BKDM-3030

Note

The addresses on the board are shown by () marks.

MPU-72 board



[Switch]

S901(F-7) : Reset switch

Resets the CPU on the MPU-72 board.

S902(G-7) : System debugging switch

When this switch is pressed, the board enters the system debugging mode.

And the LEDs (D903 through D910) display the program version number.

Note

Do not press this switch in normal times.

To exit the system debugging mode, press the reset switch ^(*4) on CPU board.

(*4) Reset switch:

DME-3000: S1 (G-1) on the CPU-114 board

DME-7000: S2 (J-1) on the CPU-196 board

[LED]

D901 (Green)(D-7) : RUN indicator

Lights during the CPU operation.

D902 (Green)(D-7) : VD indicator

Indicates the existence of VD signal.

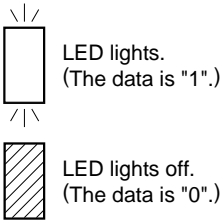
Lights when VD signal is normally input to the board.

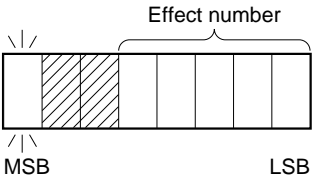
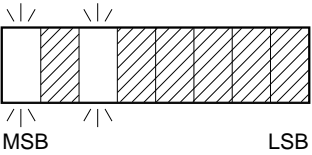
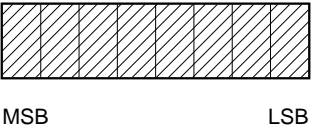
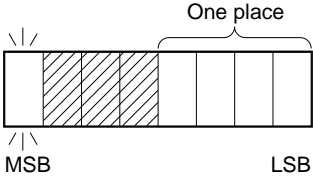
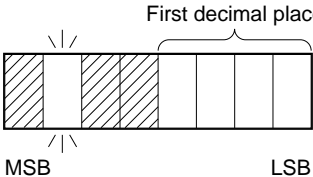
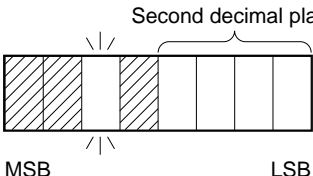
Note

If either D901 or D902 lights off, the MPU-72 board does not operate normally.

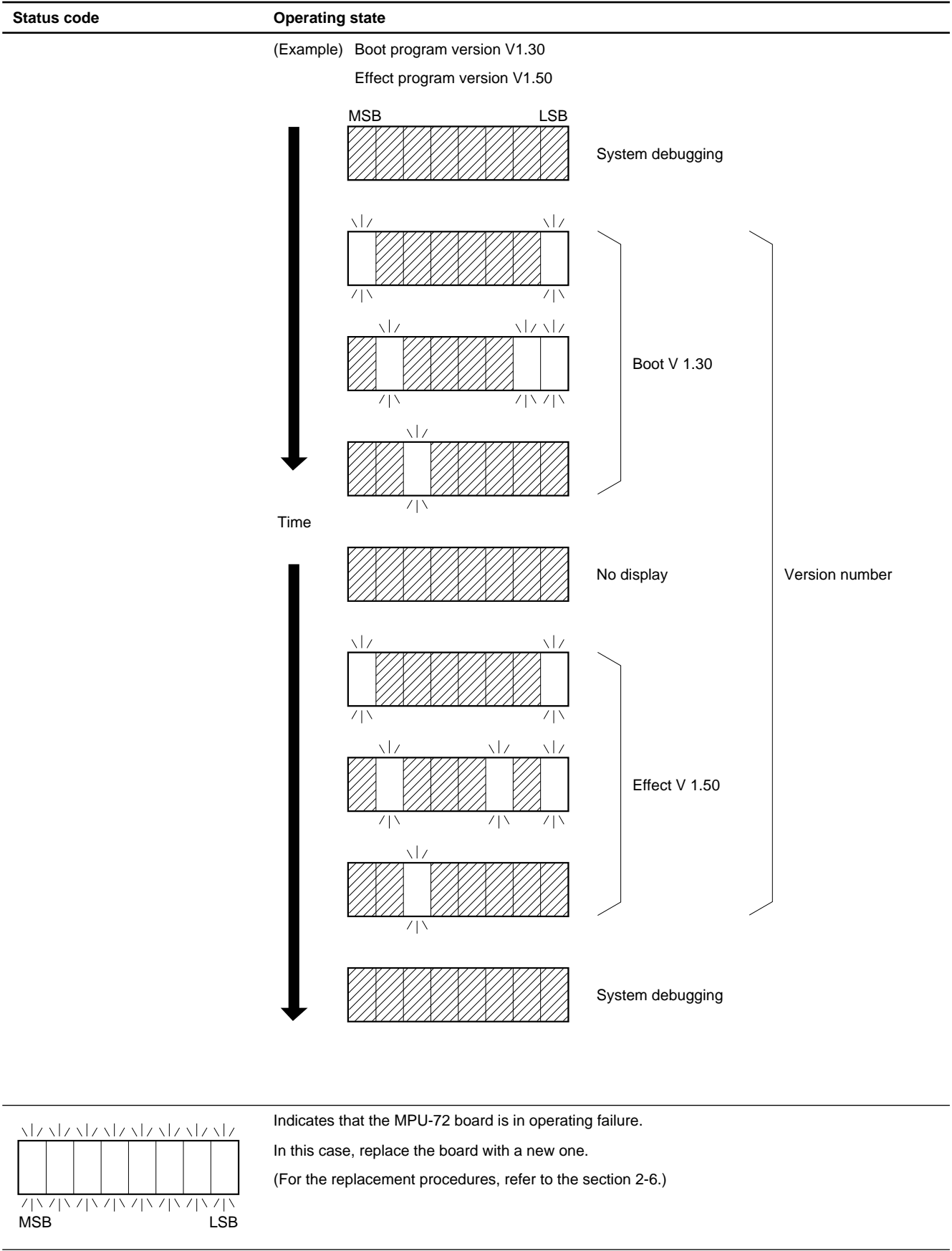
D903 through D910(E-7) : STATUS indicator

Display the operating state of the MPU-72 board in hexadecimal (HEX code) on 8 bits.



Status code	Operating state
 <p>Effect number</p> <p>MSB</p> <p>LSB</p>	<p>Indicates that the MPU-72 board operates normally.</p> <p>The lower five bits display the effect number selected on the control panel.</p> <p>When the lower five bits are all "0", non-linear effects are OFF state.</p>
 <p>MSB</p> <p>LSB</p>	<p>Indicates that the MPU-72 board is in initial setting.</p> <p>After initial setting is completed, the board starts normal operation automatically.</p>
 <p>MSB</p> <p>LSB</p>	<p>Indicates that the MPU-72 board is in system debugging.</p> <p>Then the boot program and effect program versions are displayed in the lower four bits for a given period.</p>
 <p>One place</p> <p>MSB</p> <p>LSB</p>	<p>Displayed the one place in version number.</p>
 <p>First decimal place</p> <p>MSB</p> <p>LSB</p>	<p>Displayed the first decimal place in version number.</p>
 <p>Second decimal place</p> <p>MSB</p> <p>LSB</p>	<p>Displayed the second decimal place in version number.</p>

To be continued.

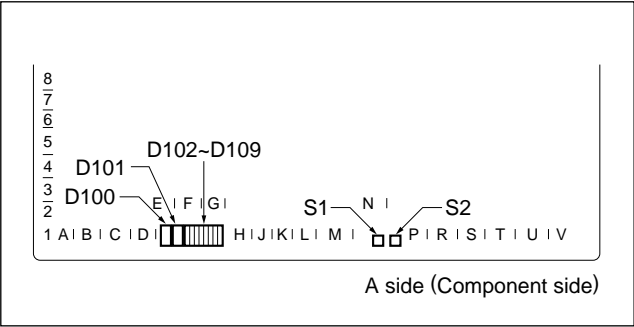


1-8-4. BKDM-3040

Note

The addresses on the board are shown by () marks.

WKG-13 board



[Switch]

S1(N-1) : Reset switch

Resets the CPU on the WKG-13 board.

Note

Do not press this switch in normal times.

S2(P-1) : System debugging switch

When this switch is pressed, the board enters the system debugging mode.

And the LEDs (D102 through D109) display the program version number.

Note

Do not press this switch in normal times.

To exit the system debugging mode, press the reset switch ^(*5) on CPU board.

(*5) Reset switch:

DME-3000: S1 (G-1) on the CPU-114 board

DME-7000: S2 (J-1) on the CPU-196 board

[LED]

D100 (Green)(E-1) : CPU RUN indicator

Lights during the CPU operation.

D101 (Green)(E-1) : GDC RUN indicator

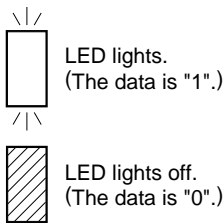
Lights during the graphic display controller operation.

Note

If either D100 or D101 lights off, the WKG-13 board does not operate normally.

D102 through D109(E-1) : STATUS indicator

Display the operating state of the WKG-13 board and the WKG-16 board (BKDM-7041) in hexadecimal (HEX code) on 8 bits.



Status code	Operating state
	Indicates that the WKG-13 board and the WKG-16 board (BKDM-7041) operate normally. The lower fourth bit: Indicates that the WKG-16 board (BKDM-7041) is installed normally. The lower third bit: Indicates that the COLOR MIX operates normally. The lower second bit: Indicates that the WIPE operates normally. The lower first bit: Indicates that the GRAPHIC operates normally.
	Indicates that the WKG-13 board is in initial setting. After initial setting is completed, the board starts normal operation automatically.
	Indicates that the WKG-13 board is in system debugging. Then the boot program and application program versions are displayed in the lower four bits for a given period.
	Displayed the one place in version number.
	Displayed the first decimal place in version number.
	Displayed the second decimal place in version number.

To be continued.

Status code

Operating state

(Example) Boot program version V1.30
Application program version V1.50

MSB LSB

System debugging

Boot V 1.30

No display

Application V 1.50

System debugging

Version number

Time

Indicates that the WKG-13 board is in operating failure.

In this case, replace the board with a new one.

(For the replacement procedures, refer to the section 2-6.)

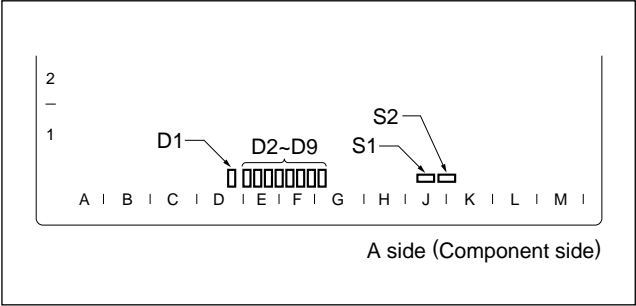
MSB LSB

1-8-5. BKDM-7070

Note

The addresses on the board are shown by () marks.

SKP-1 board



[Switch]

S1(J-1) : Reset switch

Resets the CPU and the all registers on the SKP-1 board.

Note

Do not press this switch in normal times.

S2(J-1) : System debugging switch

When this switch is pressed, the board enters the system debugging mode.

And the LEDs (D2 through D9) display the program version number.

Note

Do not press this switch in normal times.

To exit the system debugging mode, press the reset switch S2 (J-1) on CPU-196 board.

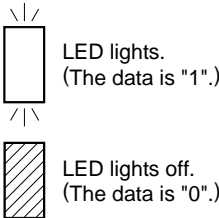
[LED]

D1(Green)(D-1) : CPU RUN indicator

Lights during the CPU operation.

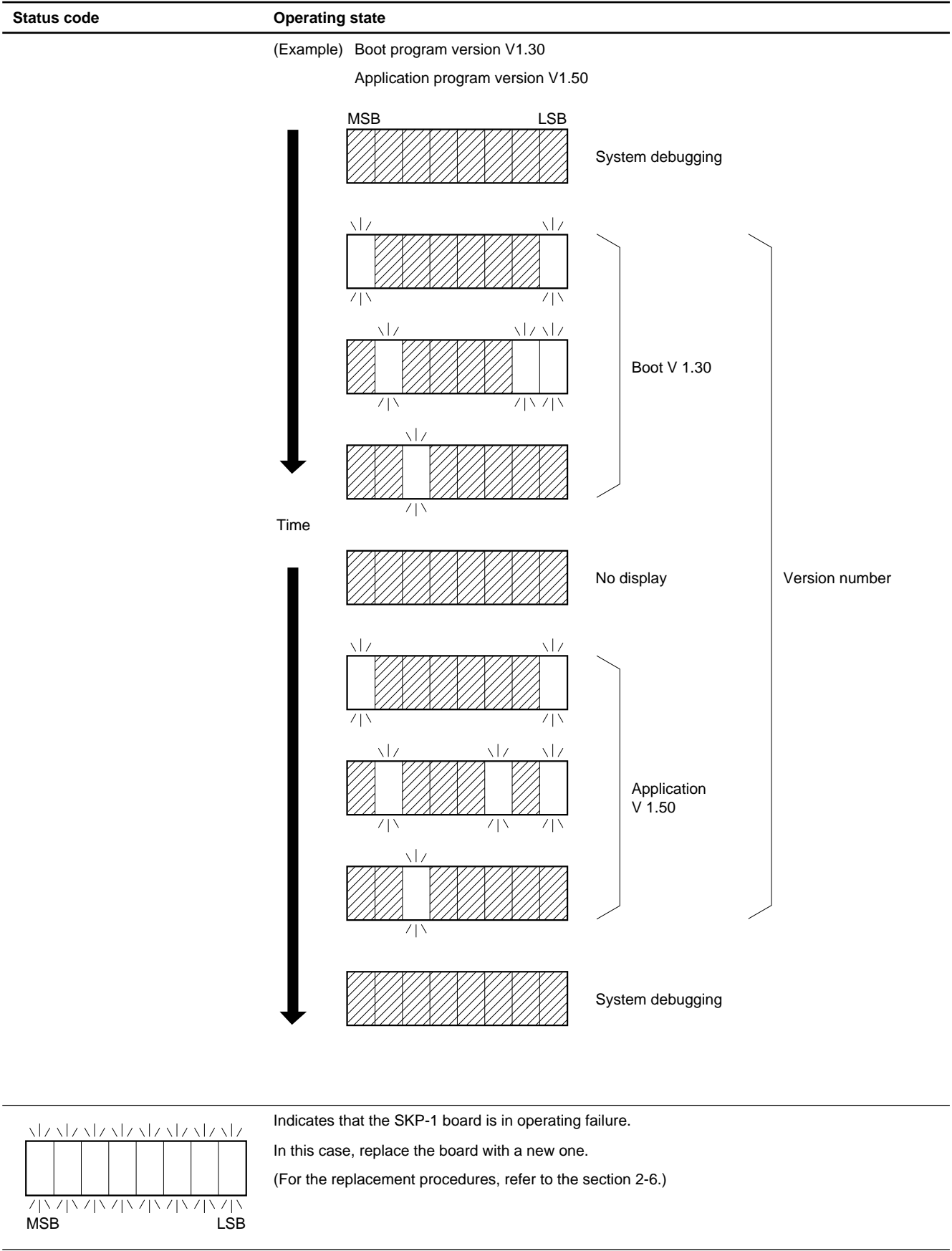
D2(E-1) through D9(F-1) : STATUS indicator

Display the operating state of the SKP-1 board in hexadecimal (HEX code) on 8 bits.



Status code	Operating state
	Indicates that the SKP-1 board operates normally. The lower fourth bit: Indicates that the BRICK is selected. The lower third bit: Indicates that the GLOW is selected. The lower second bit: Indicates that the EXTERNAL KEY BORDER is selected. The lower first bit: Indicates that the 3D SHADOW is selected.
	Indicates that the SKP-1 board is in initial setting. After initial setting is completed, the board starts normal operation automatically.
	Indicates that the SKP-1 board is in system debugging. Then the boot program and application program versions are displayed in the lower four bits for a given period.
	Displayed the one place in version number.
	Displayed the first decimal place in version number.
	Displayed the second decimal place in version number.

To be continued.





MSB

LSB

Indicates that the SKP-1 board is in operating failure.

In this case, replace the board with a new one.

(For the replacement procedures, refer to the section 2-6.)

1-9. Installation of Standard Boards

Each plug-in board must be installed in the corresponding slot of DME-3000/7000.

The board name and the slot number in which the board can be installed are displayed near the board lever on the left edge of the board (A side).

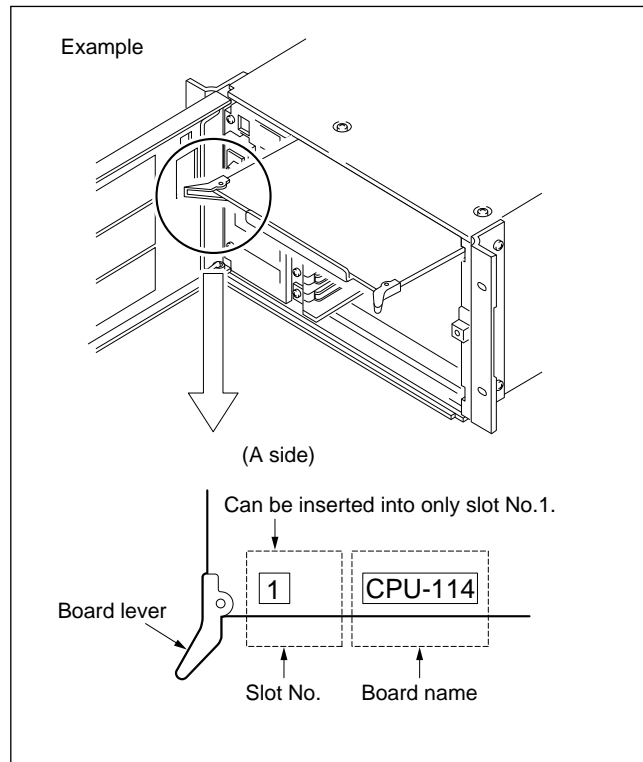
Confirm that each board is properly installed in the specified slot.

Each optional board should also be installed in the specified range and procedure according to the slot number display near the board lever on the left edge.

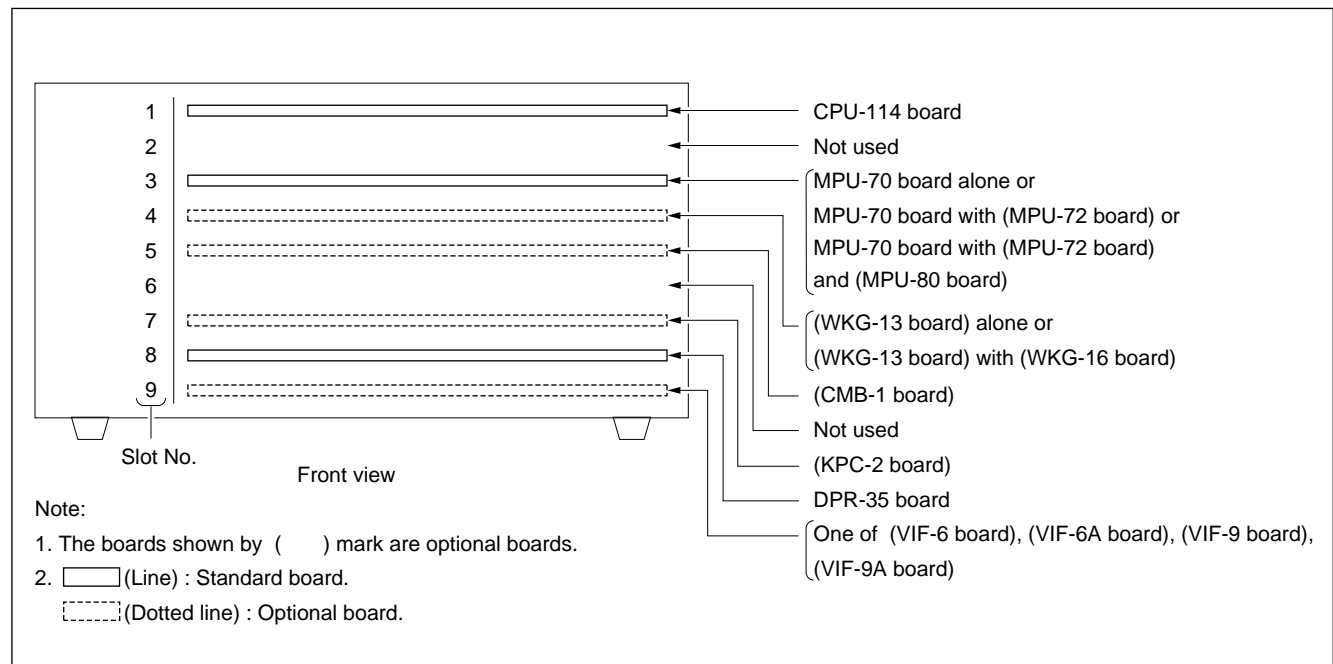
For the removal/installation procedures of the plug-in boards, refer to the section 2-6.

Note

- Before inserting or removing a board, always turn the power off.
- After inserting a board, and before turning on the power, make sure that the number on the board matches the number on the slot.
- Be sure to confirm the secondary power supply voltage when a optional board is added or the board is replaced. (Refer to the section 1-11.)



1-9-1. DME-3000

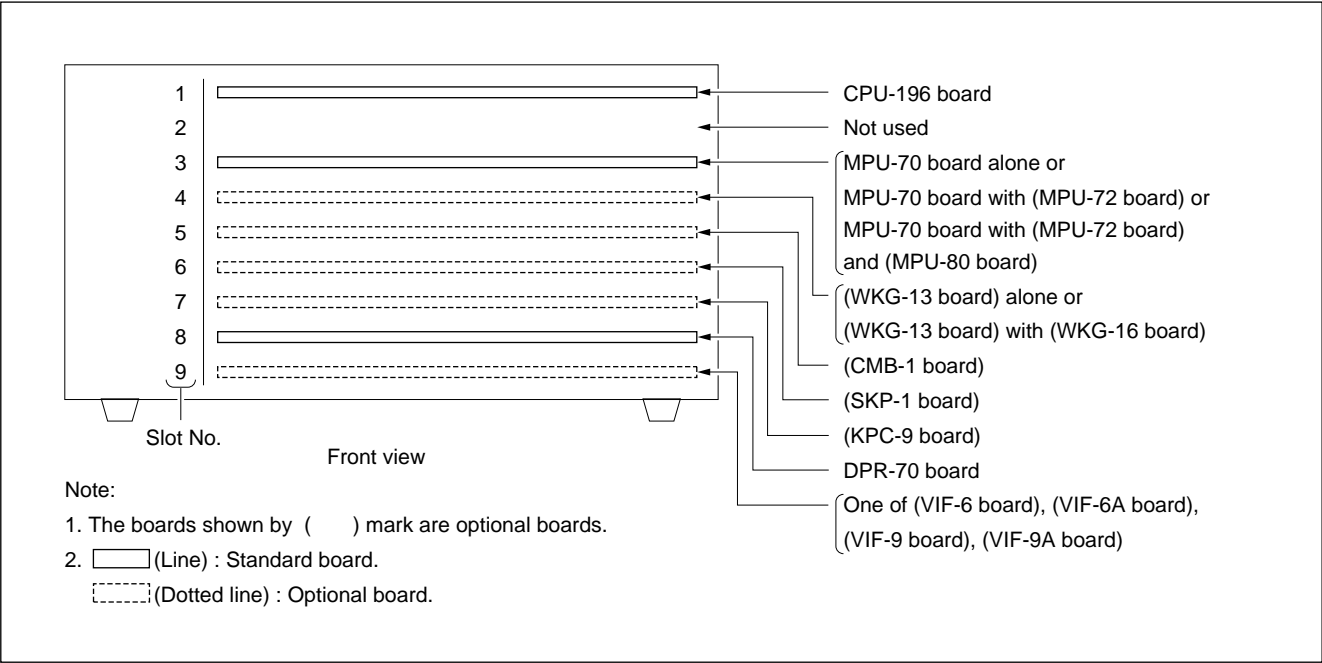


Slot No.	Standard boards	Optional boards (Model name)
1	CPU-114	—
2	—	—
3	MPU-70	MPU-72(BKDM-3030) with MPU-80(BKDM-7031)
4	—	WKG-13(BKDM-3040) with WKG-16(BKDM-7041)
5	—	CMB-1(BKDM-3050)
6	—	—
7	—	KPC-2(BKDM-3060)
8	DPR-35	—
9	—	VIF-9A(BKDM-3020) VIF-6A(BKDM-3021) VIF-9(BKDM-3022) VIF-6(BKDM-3023)

Note

- Insert the appropriate I/O board for your system in slot 9. By inserting one of the four available I/O boards you can switch between component and composite modes.
- When using a component mode, make the appropriate settings for the “525/625” and “4:3/16:9” switches in the BKDM-3010 SYSTEM menu.
- For connecting procedures of the MPU-70 board and MPU-72 board, the MPU-72 board and MPU-80 board, the WKG-13 board and WKG-16 board, refer to the section 1-10.

1-9-2. DME-7000



Slot No.	Standard boards	Optional boards (Model name)
1	CPU-196	—
2	—	—
3	MPU-70	MPU-72(BKDM-3030) with MPU-80(BKDM-7031)
4	—	WKG-13(BKDM-3040) with WKG-16(BKDM-7041)
5	—	CMB-1(BKDM-3050)
6	—	SKP-1(BKDM-7070)
7	—	KPC-9(BKDM-7060)
8	DPR-70	—
9	—	VIF-9A(BKDM-3020) VIF-6A(BKDM-3021) VIF-9(BKDM-3022) VIF-6(BKDM-3023)

Note

- Insert the appropriate I/O board for your system in slot 9. By inserting one of the four available I/O boards you can switch between component and composite modes.
- When using a component mode, make the appropriate settings for the “525/625” and “4:3/16:9” switches in the BKDM-3010 SYSTEM menu.
- For connecting procedures of the MPU-70 board and MPU-72 board, the MPU-72 board and MPU-80 board, the WKG-13 board and WKG-16 board, refer to the section 1-10.

1-10. Installation of Optional Boards

DME-3000/7000 can be used for various systems, and its functions can be extended by selecting the optional boards. DME-3000/7000 has the following optional boards.

VIF-9A board (BKDM-3020):

Digital Composite Input/Output Board

VIF-6A board (BKDM-3021):

Digital Component Input/Output Board

VIF-9 board (BKDM-3022):

Digital/Analog Composite Input/Output Board

VIF-6 board (BKDM-3023):

Digital/Analog Component Input/Output Board

MPU-72 board (BKDM-3030):

Non-linear Effects Board

WKG-13 board (BKDM-3040):

Wipe & Graphics Board

CMB-1 board (BKDM-3050):

Combiner & Lighting Board

KPC-2 board (BKDM-3060):

Key Channel & Recursive Effects Board

MPU-80 board (BKDM-7031):

Digital Sparkle Effects Board

WKG-16 board (BKDM-7041):

Digital Sketch Effects Board

KPC-9 board (BKDM-7060) (*1):

Key Channel & Recursive Effects Board

SKP-1 board (BKDM-7070) (*1):

Advanced Shadow Effects Board

(*1) : DME-7000 only

This section explains how to install the following optional boards.

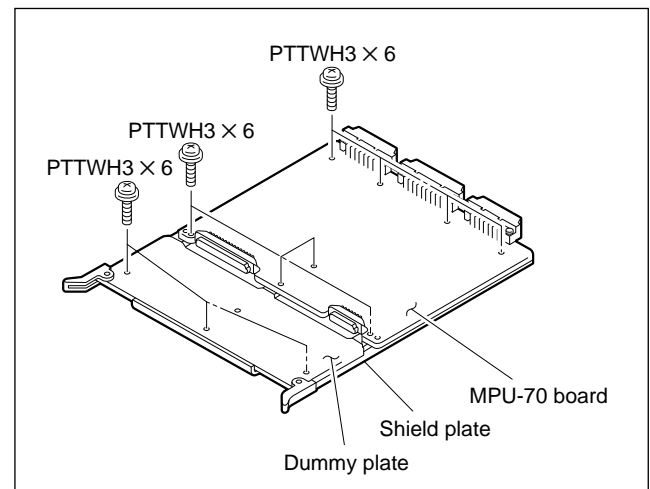
- MPU-72 board (BKDM-3030)
- MPU-80 board (BKDM-7031)
- WKG-16 board (BKDM-7041)

For how to install the board other than those mentioned above, refer to the section 1-9.

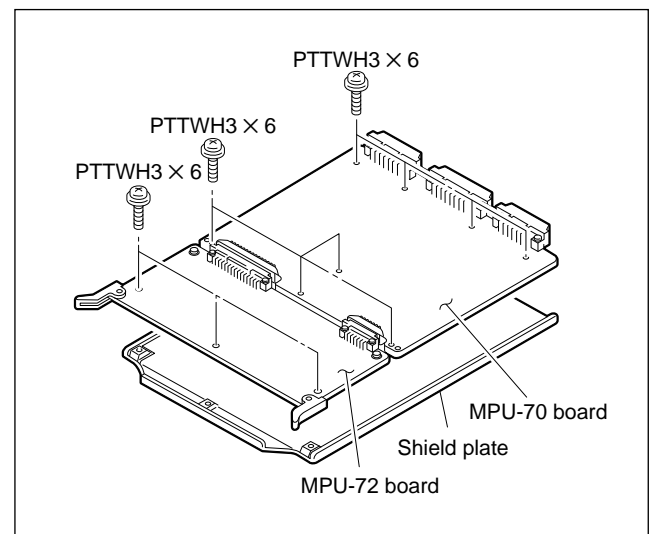
1-10-1. MPU-72 Board (BKDM-3030) Installation

Connect the MPU-72 board to the MPU-70 board according to the following procedures.

1. Remove the seven screws securing the dummy plate and the shield plate.



2. Connect the connectors on the MPU-72 board to the connectors on the MPU-70 board.
3. Install the MPU-72 board in the MPU-70 board and shield plate with the eleven screws removed in step 1.



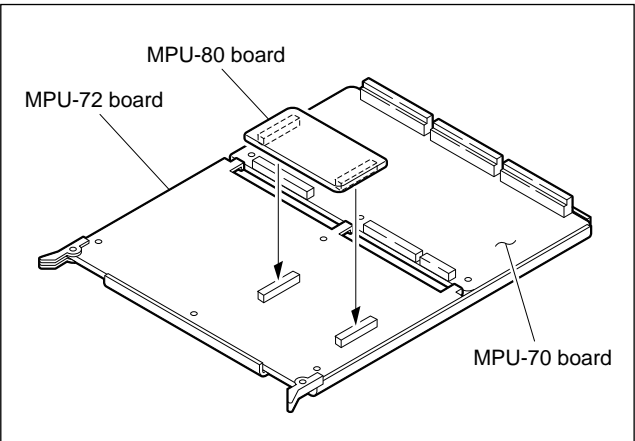
1-10-2. MPU-80 Board (BKDM-7031) Installation

Connect the MPU-80 board to the MPU-72 board according to the following procedures.

1. Align the component markings on the MPU-80 board with component markings on the MPU-72 board.
2. Connect the connectors while pressing the connector portions on the MPU-80 board to the connectors on the MPU-72 board.

Note

Make sure that the connectors are connected tightly. If the connectors cannot be connected completely, the board may be placed in the other way.



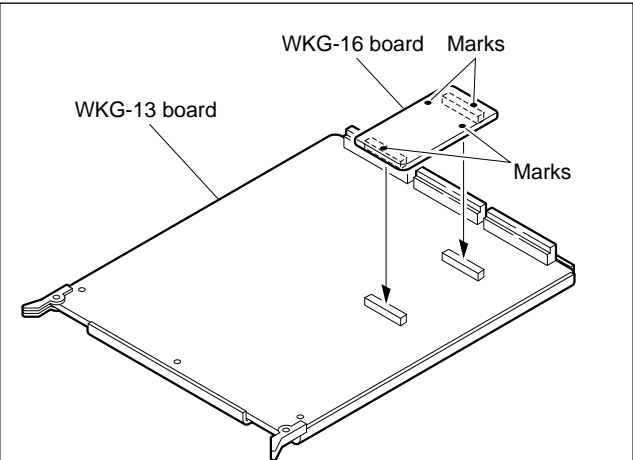
1-10-3. WKG-16 Board (BKDM-7041) Installation

Connect the WKG-16 board to the WKG-13 board according to the following procedures.

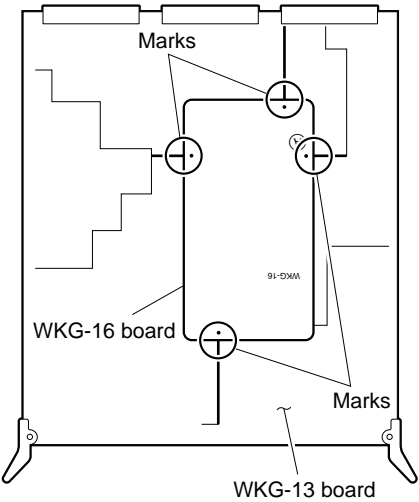
1. Align the four marks on the WKG-16 board with component markings on the WKG-13 board.
2. Connect the connectors while pressing the connector portions on the WKG-16 board to the connectors on the WKG-13 board.

Note

Make sure that the connectors are connected tightly. If the connectors cannot be connected completely, the board may be placed in the other way.



*The marks when installing the WKG-16 board to WKG-13 board.



1-11. Confirmation of Secondary Power Supply Voltage

DME-3000/7000 has a power supply of +5 V(A), +5 V(B), –5 V, and +12 V.

The power indicator uses +5 V(A), and the fan uses +12 V. After installation of all required board is completed, confirm the power supply voltage inside the unit as described below.

Voltage measurement of +5 V(A), +5 V(B), and –5 V

The check terminals in which the probe of a digital voltmeter can be inserted for the voltage measurement of +5 V(A), +5 V(B), and –5 V are provided on CPU board and VIF board.

[Check procedures]

1. Open the front panel.
(Refer to the steps 1 and 2 in the section 2-2.)
2. Confirm that the power supply unit is properly inserted and securely fixed with four screws.
3. Turn on the power, and confirm that the CPU RUN indicator (*) on CPU board lights up.

(*) CPU RUN indicator:

DME-3000: ND301(F-1) on the CPU-114 board

DME-7000: D2(J-1) on the CPU-196 board

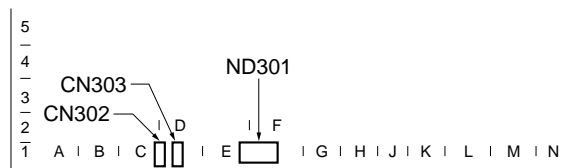
4. Remove the five screws (BVTT3 × 5), then remove the board retainer.

Note

Never connect the digital voltmeter without removing the board retainer. There is danger of causing a short circuit between the check terminals and the board retainer.

5. Connect the digital voltmeter between the check terminals on each board. Then confirm that the voltage values of each check terminal satisfy the specifications.

<DME-3000>
CPU-114 board



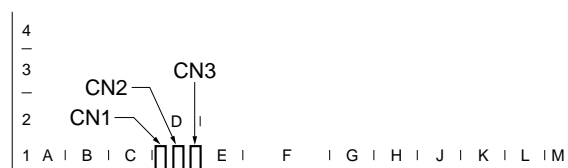
A side (Component side)

<DME-7000>
CPU-196 board



A side (Component side)

<DME-3000/7000>
VIF-6/9/6A/9A board



A side (Component side)

Voltage	Specification	Check terminal	Adjustment potentiometer
+5 V(A)	+5.00 ±0.05 V	DME-3000: CPU-114 board CN302(+5 V) ↔ CN303(GND) DME-7000: CPU-196 board CN802(+5 V) ↔ CN803(GND)	RV1
+5 V(B)	+5.00 ±0.05 V	VIF-6/9/6A/9A board CN1(+5 V) ↔ CN3(GND)	RV2
–5 V	–5.00 ±0.05 V	VIF-6/9/6A/9A board CN2(–5 V) ↔ CN3(GND)	RV3

If the specification is not satisfied, adjust the voltage as described below.

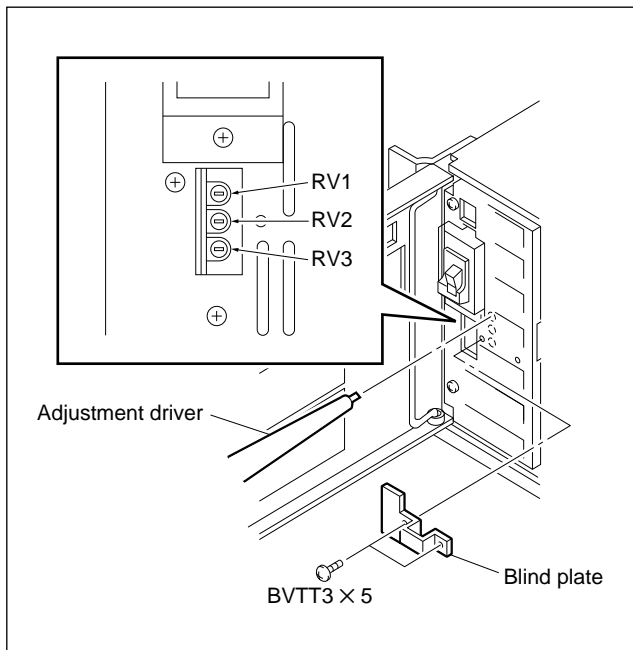
The voltage adjustment is performed with the digital voltmeter connected to the check terminals.

[Adjustment procedure]

1. Remove the two screws, then remove the blind plate of the power supply unit.
2. Insert the tip of an adjustment driver from the adjustment window, and turn the adjustment potentiometer of the switching regulator. Adjust the potentiometer until the digital voltmeter read a proper voltage.

Note

Set the power supply voltage with the all plug-in boards to be used inserted.



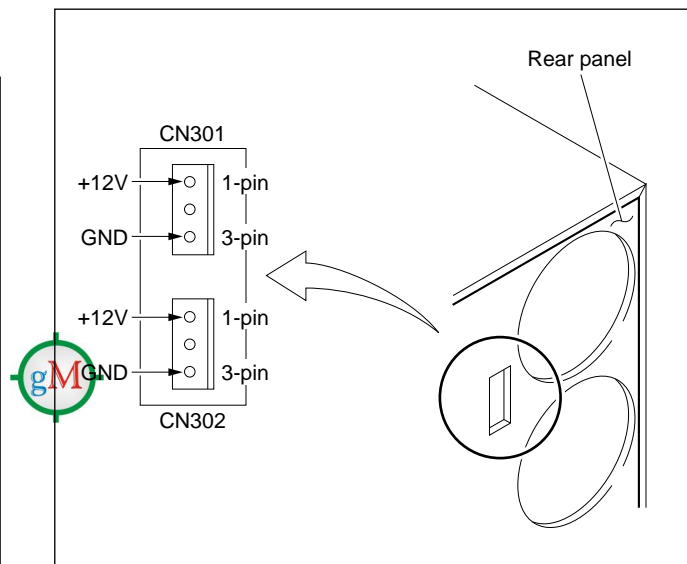
Voltage Measurement of +12 V

It is not required to adjust a voltage of +12 V.

If it is necessary to confirm the voltage, confirm the voltage according to the following procedures.

1. Remove the fan cover on the rear panel.
(Refer to the section 2-4-2.)
2. Connect a digital voltmeter between 1-pin (+12 V) and 3-pin (GND) of the connector terminal (CN301 or CN302) for a DC fan, and confirm that the voltage value is satisfied the specification.

Specification: $+12 \pm 1$ V



1-12. Multi Channel Setting

To control two or more DME-3000/7000 from one control panel, each DME-3000/7000 must be recognized on the control panel by respective channel numbers. This is called a physical channel.

The physical channel is set by the following switches.

DME-3000 : S301-7 and S301-8 on CPU-114 board

Physical channel	S301-7	S301-8
CH1	OFF	OFF
CH2	OFF	ON
CH3	ON	OFF
CH4	ON	ON

DME-7000 : S801-6 to S801-8 on CPU-196 board

Physical channel	S801-6	S801-7	S801-8
CH1	OFF	OFF	OFF
CH2	OFF	OFF	ON
CH3	OFF	ON	OFF
CH4	OFF	ON	ON
CH5	ON	OFF	OFF
CH6	ON	OFF	ON
CH7	ON	ON	OFF
CH8	ON	ON	ON

Note

Set their different physical channels to two or more DME-3000/7000.

The physical channel is not necessarily same as the logical channel number displayed on the control panel. The physical channel and its corresponding logical channel can be assigned by the setup menu.

Note

For details of the setup menu, refer to the optional User's Guide BZDM-3020 or BZDM-7020.

Note

If the channel number is not assigned, a message "Communication Error" displays on the menu monitor. This message shows that there is obstruction in communication between control panel and processor.

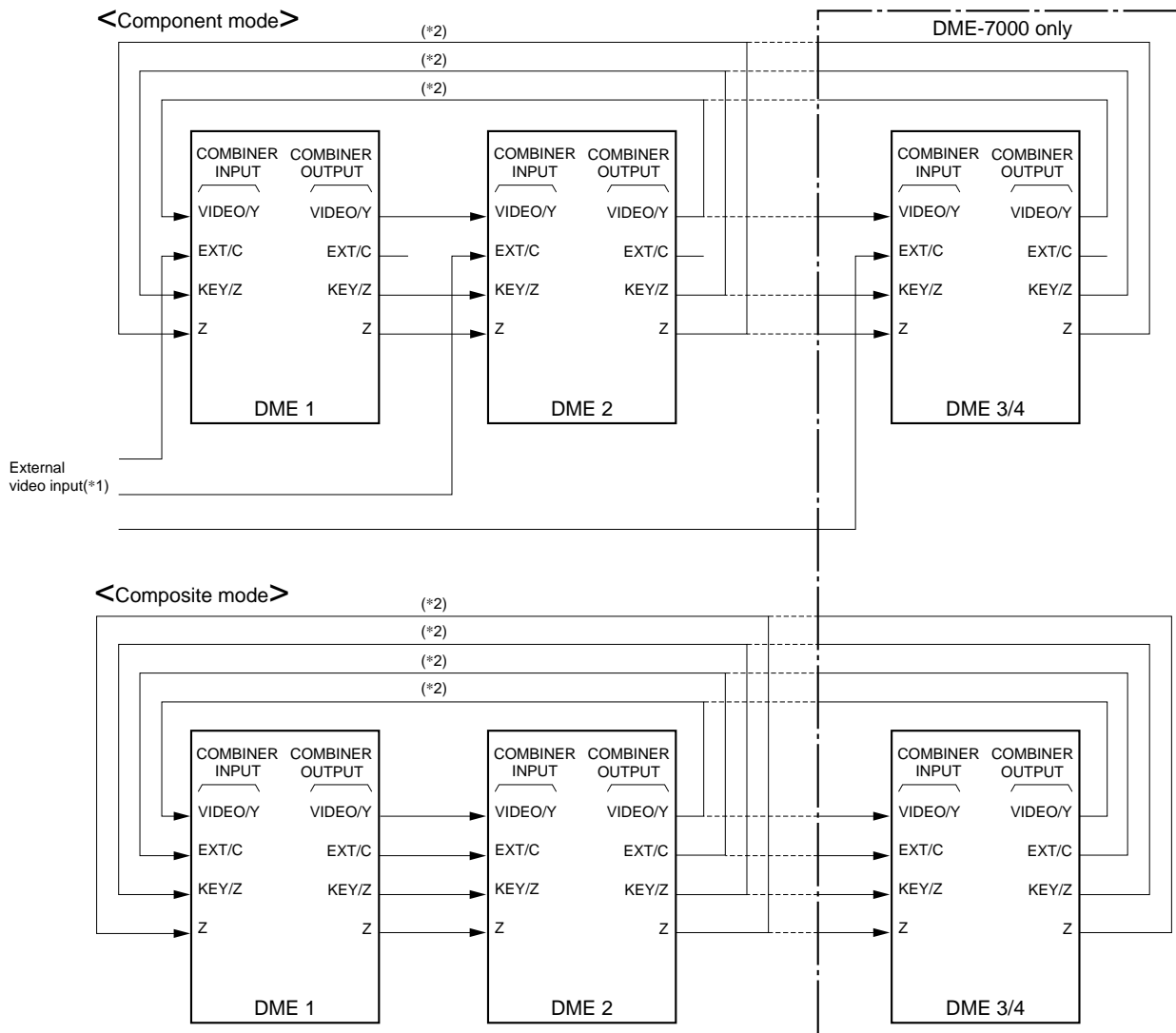
1-13. Connection when Combiner Board Installation

When optional CMB-1 board (BKDM-3050) are installed and when multiple pictures are synthesized using a combiner function, each combiner input/output connectors should be connected.

Connect each connector as shown below.

(*1) : For external video input, a serial digital signal can be input in the component mode, and this input signal can be synthesized on the background screen of a DME picture.

(*2) : If the synthesized picture of DME1 and DME2 is obtained from only DME2, these connections are not required.



1-14. Switch Setting when Connecting Other Equipments

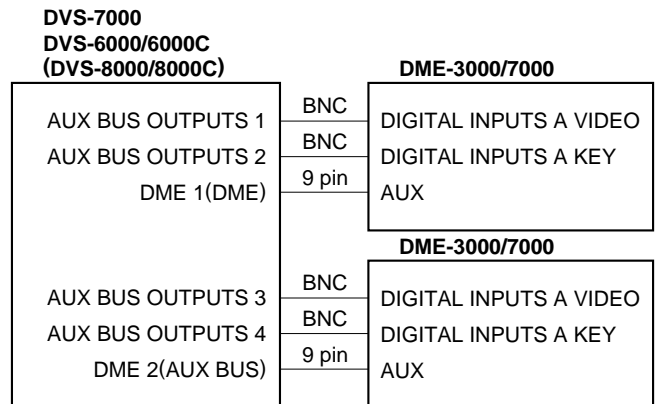
When DME-3000/7000 is used in connection with other equipments, set the switches of other equipments connecting to DME-3000/7000 in example of system connection. For the switch setting of DME-3000/7000, refer to the section 1-8-1.

When setting the unit address (UA2) of the source selector, set the UA2 setting switch on the board of other equipments according to the UA2 setting table below.

UA2 setting table

UA2	Switch setting
01	Bit-1: ON (Others OFF)
02	Bit-2: ON (Others OFF)
04	Bit-3: ON (Others OFF)
08	Bit-4: ON (Others OFF)
10	Bit-5: ON (Others OFF)
20	Bit-6: ON (Others OFF)
40	Bit-7: ON (Others OFF)
80	Bit-8: ON (Others OFF)

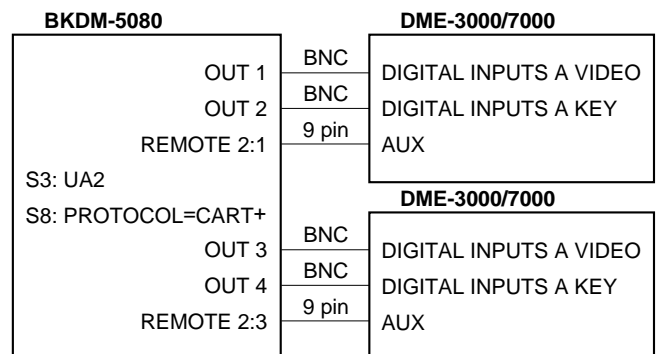
1-14-1. Connection with Digital Video Switcher



Note

When connecting digital video switcher to DME-3000/7000, set up the unit according to User's Guide of each switcher.

1-14-2. Connection with Source Selector Unit



CPU-99 Board (BKDM-5080)

S3 : UA2 setting

Set the unit address (UA2) according to the UA2 setting table.

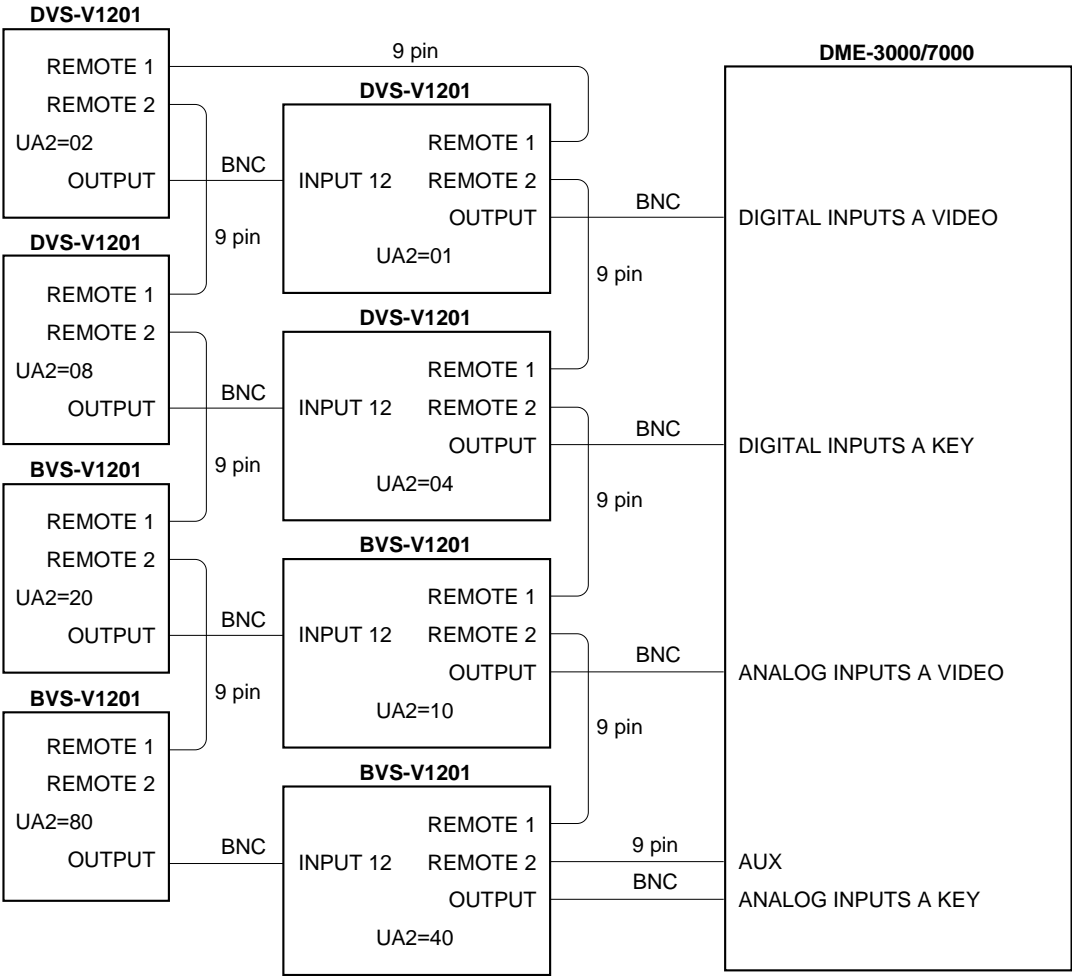
S8 : CART + protocol setting

Be sure to set S8-1 and S8-2 to OFF (CART + protocol).

Note

For details of the switch settings of BKDM-5080, refer to the section 1-7-1 in the Maintenance Manual for BKDM-5080.

1-14-3. Connection with Video Routing Switcher



IF-278 Board (DVS-V1201/BVS-V1201)

S2 : UA2 setting

Set the unit address (UA2) of each equipment connecting to DME-3000/7000 in the figure above.
For the switch setting of each unit address, refer to the UA2 setting table.

Note on connection in analog component mode

When switching analog component video signal, have three BVS-V1201 ready.
Make sure that three BVS-V1201 are set to the same unit address.
In one of three BVS-V1201, set the switch S1-8 (RESPONSE of REMOTE 1 and 2) on the IF-278 board to OFF. In two other BVS-V1201, set the switch S1-8 on the IF-278 board to ON.

Note

For details of the switch settings of DVS-V1201/BVS-V1201, refer to the section 1-4 in the Maintenance Manual for DVS-V1201 or BVS-V1201.

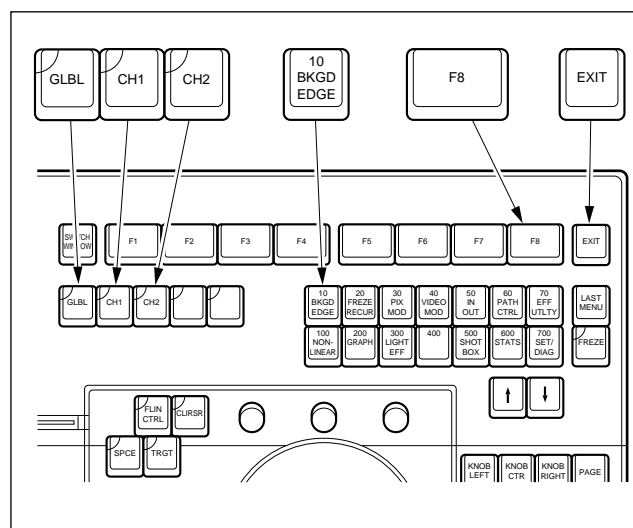
1-15. Hard Reset of Control Panel

Reset the control panel BKDM-3010 in the following cases.

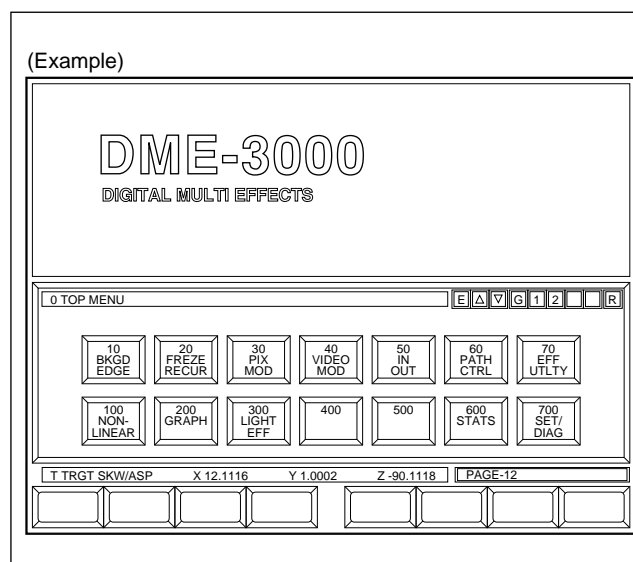
- When the software for BKDM-3010 is installed
- When the software for BKDM-3010 is updated
- When the self-diagnosis is terminated

[Procedures]

1. Press the following six buttons on the control panel BKDM-3010 simultaneously.
 - GLBL
 - CH1
 - CH2
 - ¹⁰ BKGD EDGE
 - F8
 - EXIT



2. The initial screen appears on the menu monitor.



1-16. Installation of Software

The CPU programs of DME-3000/7000 and BKDM-3010 are installed in flash memory that can be electrically erased from a floppy disk. Therefore, ROM replacement is not required when updating.

A CPU program has already been installed at the factory. However, the installed CPU program may be old in version level. Be sure to install the software according to the following procedures.

1-16-1. DME-3000

Software Installation

Install the operation software for the processor in accordance with the following procedures.

Note

- If there is effects data stored in DME-3000 registers, the operation of installing the software will cause the data to be destroyed. Before beginning the installation operation, save the contents of registers to floppy disk. (For details of saving to floppy disk, refer to the optional User's Guide BZDM-3020.)
- If using optional boards, complete the installation of the optional boards before installing the software. If you add optional boards after installing the software, install the software again.

[Procedures]

1. Insert the floppy disk labeled "SYSTEM DISK 2" of BZDM-3020 in the floppy disk drive of BKDM-3010.
2. With the third set of soft key indications shown in the SETUP & DIAG menu, press "F4" (INSTALL) to display the INSTALL menu.
3. Press the channel button (CH1 or CH2) in the channel selection section of BKDM-3010 for the processor channel for which you wish to install the software.
4. Press "F1" (INSTALL).
5. To confirm the installation, press "F5" (OK). To abort the installation, press "F6" (CANCEL).

Note

The process takes approximately ten minutes, during which no other operations are possible.

6. When the installation completes normally, a message "Finished" displays on the monitor.

Note

For details, refer to the optional User's Guide BZDM-3020.

1-16-2. DME-7000

Software Installation

Install the operation software for the processor in accordance with the following procedures.

Note

- If there is effects data stored in DME-7000 registers, the operation of installing the software will cause the data to be destroyed. Before beginning the installation operation, save the contents of registers to floppy disk. (For details of saving to floppy disk, refer to the optional User's Guide BZDM-7020.)
- If using optional boards, complete the installation of the optional boards before installing the software. If you add optional boards after installing the software, install the software again.

[Procedures]

1. Change the two blank buttons in the channel selection section of BKDM-3010 for "CH3" and "CH4" buttons that is supplied with BZDM-7020. (Refer to the section 3-4-2.)
2. Insert the floppy disk labeled "SYSTEM DISK 2" of BZDM-7020 in the floppy disk drive of BKDM-3010.
3. With the third set of soft key indications shown in the SETUP & DIAG menu, press "F4" (INSTALL) to display the INSTALL menu.
4. Press the channel button (CH1 to CH4) in the channel selection section of BKDM-3010 for the processor channel for which you wish to install the software.
5. Press "F1" (INSTALL).
6. To confirm the installation, press "F5" (OK). To abort the installation, press "F6" (CANCEL).

Note

The process takes approximately ten minutes, during which no other operations are possible.

7. When the installation completes normally, a message "Finished" displays on the monitor.

Note

For details, refer to the optional User's Guide BZDM-7020.

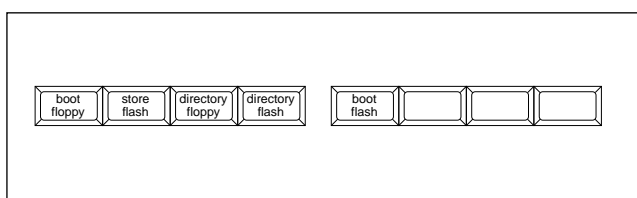
1-16-3. BKDM-3010

Software Installation

Install the operation software for the control panel in accordance with the following procedures.

[Procedures]

1. Insert the floppy disk labeled “SYSTEM DISK 1” of BZDM-3020 or BZDM-7020 in the floppy disk drive of BKDM-3010.
2. Reset the control panel. (Refer to the section 1-15.)
3. The following display appears on the monitor. Then press “F2” (store flash).



Note

The process takes approximately ten minutes, during which no other operations are possible.

4. When the installation completes normally, a message “store flash ROM complete” displays on the monitor.
5. Press “F5” (boot flash) with the floppy disk inserted. Then the program is loaded from the flash memory and BKDM-3010 is started.

Note

For details, refer to the optional User’s Guide BZDM-3020 or BZDM-7020.

Starting BKDM-3010 by flash memory

Load a program from the flash memory and start BKDM-3010 in accordance with the following procedures.

[Procedures]

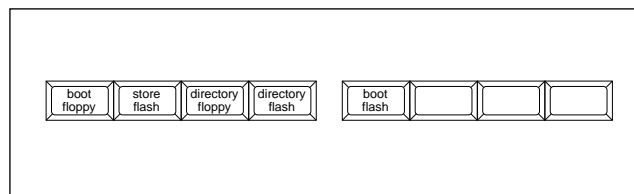
1. Eject a floppy disk from the floppy disk drive.
2. Reset the control panel. (Refer to the section 1-15.)
3. A program is loaded from the flash memory and BKDM-3010 is started.

Starting BKDM-3010 by floppy disk

Start BKDM-3010 by loading a program from the floppy disk without loading a program from the flash memory in accordance with the following procedures.

[Procedures]

1. Insert the floppy disk labeled “SYSTEM DISK 1” of BZDM-3020 or BZDM-7020 in the floppy disk drive of BKDM-3010.
2. Reset the control panel. (Refer to the section 1-15.)
3. The following display appears on the monitor. Then press “F1” (boot floppy).



4. A program is loaded from the floppy disk and BKDM-3010 is started.

Section 2

DME-3000/7000 Service Overview

2-1. Removal from Rack

WARNING

Never pull out two or more units at a time.

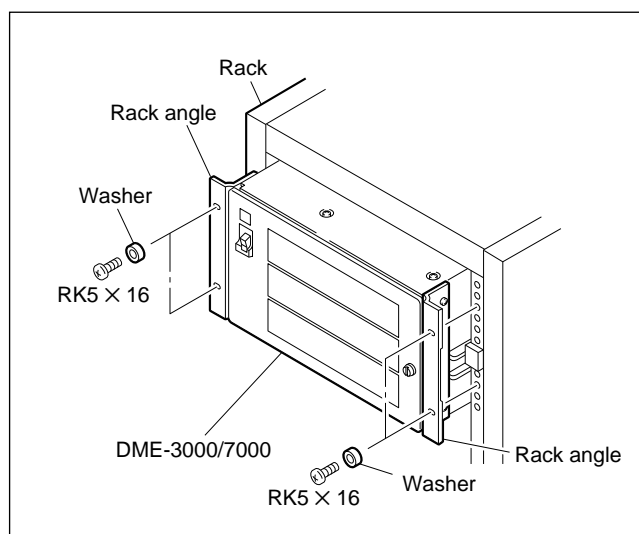
If two or more units are pulled out, the rack falls down in under the weight of the units. This may cause a serious injury.

CAUTION

- Be sure to pull out the unit with two-person or more. Trying to handle this job by a one-person could lead to injury.
- Be sure to handle this job carefully keeping in balance. If you lose your balance, the unit will be dropped. This may cause a injury.
- Be careful not to get caught your hand and finger in the rack mount rail.

<Procedure>

1. Turn the power off.
2. Disconnect all cables from the connector panel.
3. Remove the four rack mounting screws and washers.
4. Pull the rack angles toward you.



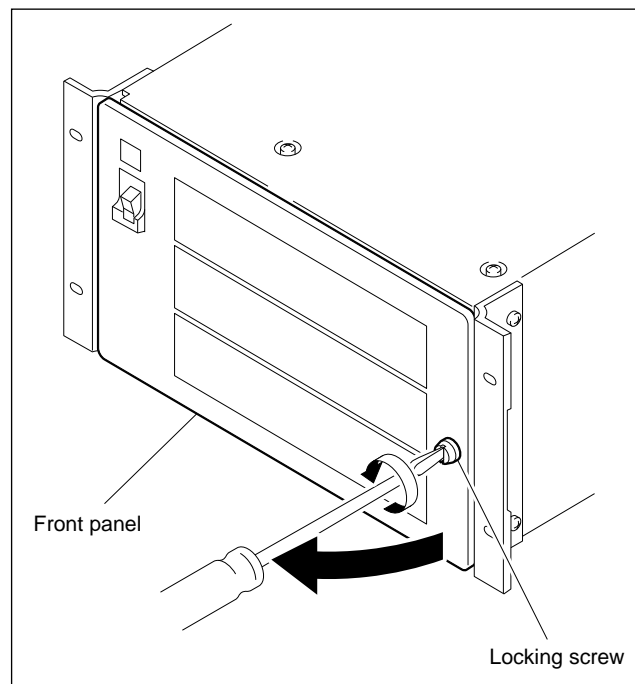
Note

When the unit is mounted in the rack, refer to steps 5 through 7 in section 1-6.

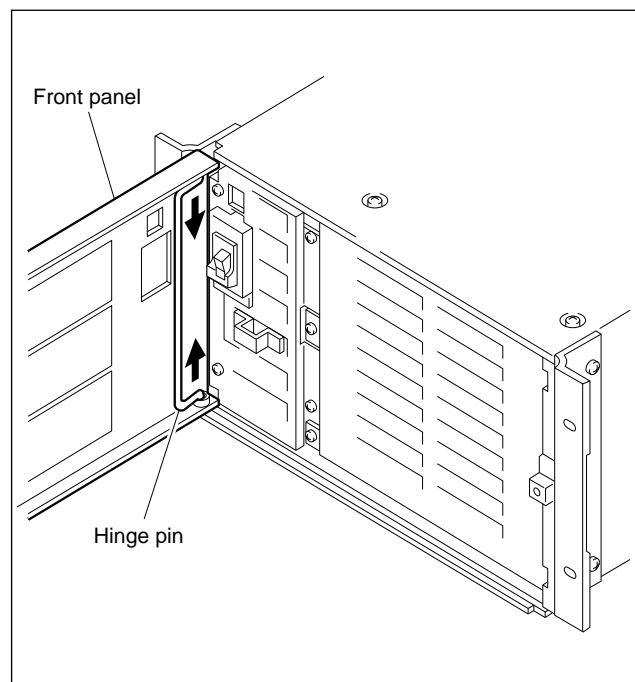
2-2. Removal of Cabinet

Opening/Closing and Removal of Front Panel

1. Loosen the locking screw on the front panel using a flat-blade screwdriver.
2. Pull the locking screw toward you and open the front panel.

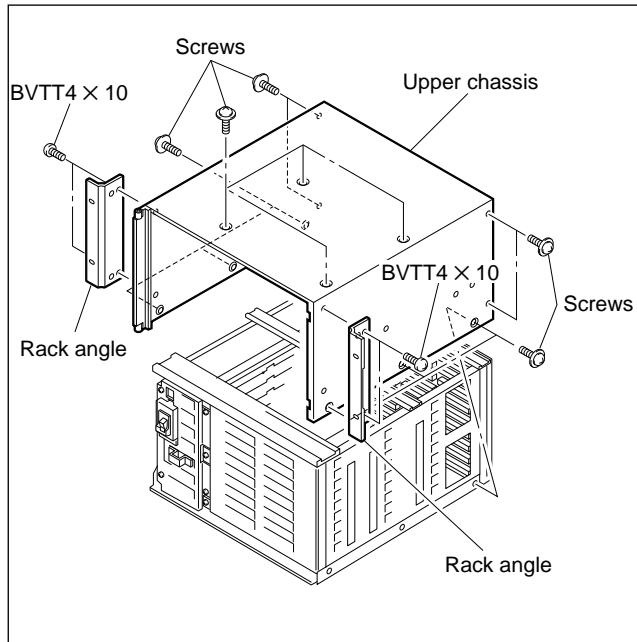


3. Push the hinge pin in the direction of the arrows while holding the front panel, then remove the front panel.



Removing the Upper Chassis

1. Remove the four screws securing the rack angles of both sides.
2. Remove the fourteen screws shown in the figure, then pull up the upper chassis.



2-3. Cleaning of Front Panel

Clean the filter at the rear of the front panel periodically because it apt to catch dust.

It is recommended to replace the filter every five years.

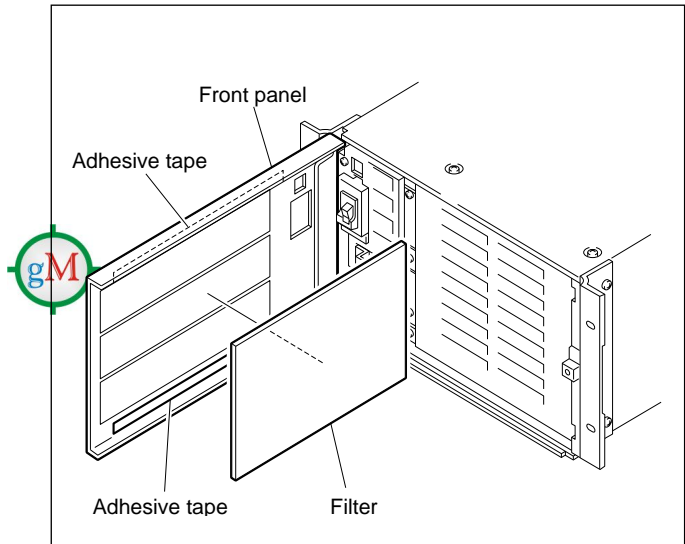
1. Open the front panel.
(Refer to the steps 1 and 2 in section 2-2.)
2. Peel the filter away from the adhesive tapes.
3. Remove dust on the filter using a vacuum cleaner.

Note

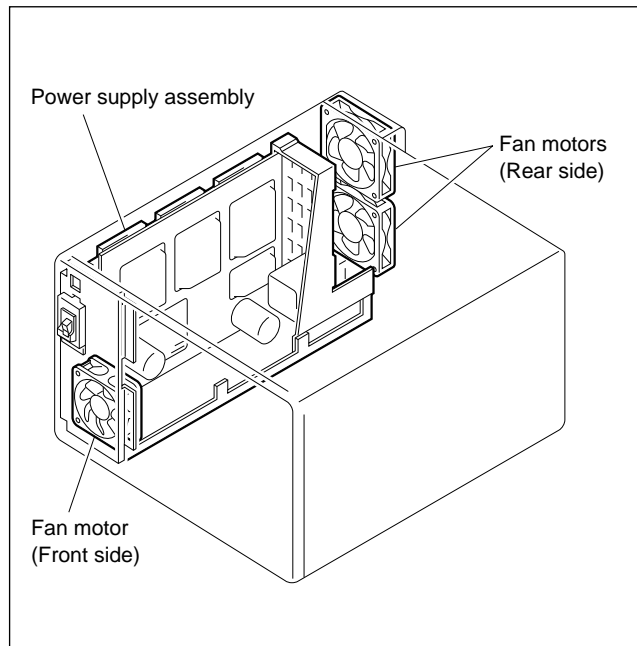
If dust is caught heavily, it is recommended to wash the filter.

When washing the filter, be sure to dry it well.

4. Adhere the filter to the adhesive tapes.



2-4. Location of Main Parts



Part Name	Part No.
POWER ASSY	A-8267-803-A
FAN MOTOR (Front side)	1-541-891-11
FAN MOTOR (Rear side)	1-541-890-21

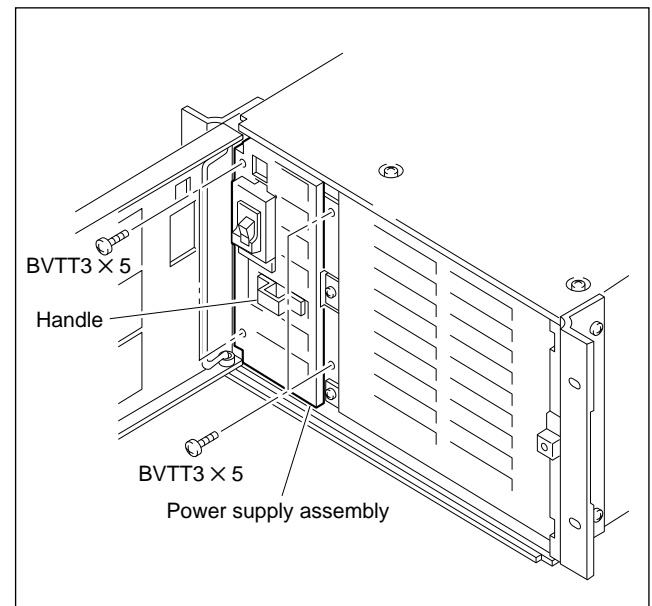
2-5. Replacement of Main Parts

2-5-1. Power Supply Unit

WARNING

To avoid shock hazards, be sure to turn the power switch off, and unplug the power cord before replacing the power supply unit.

1. Turn the power off.
2. Unplug the power cord on the rear panel side.
3. Open the front panel.
(Refer to steps 1 and 2 in section 2-2.)
4. Remove the four screws shown in the figure.
5. Pull out the power supply assembly with the handle in hand, then remove it.



6. Install a new power supply assembly in the reverse order of steps 1 through 5.
7. Confirm the secondary power supply voltage.
(Refer to section 1-11.)

2-5-2. Fan Motor

If the fan stops during normal operation, the alarm display indicates on the display connected to the control panel. In this case, replace the fan motor.

Note

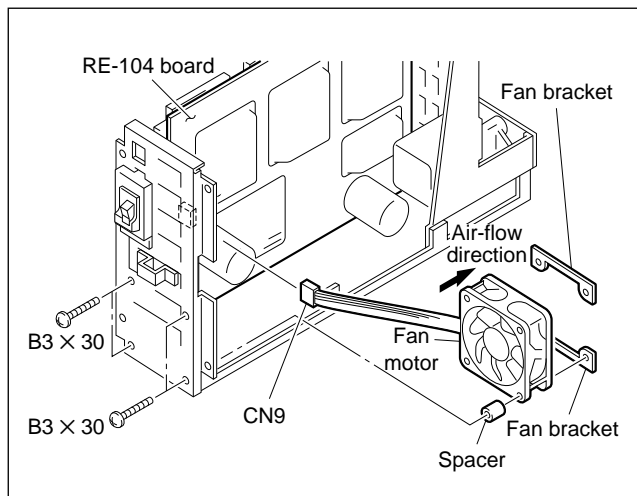
If DME-3000/7000 is used continuously, replace the fan motors every two years.

When the fan motors are used for a long time period, the rotation speed getting slow by wearing.

Fan on the Front Side Replacement

The fan motor on the front side is replaced simultaneously with when the power supply assembly is replaced.

1. Turn the power off.
2. Unplug the power cord on the rear panel side.
3. Remove the power supply assembly.
(Refer to section 2-5-1.)
4. Disconnect the connector CN9 on the RE-104 board.
5. Remove the four screws securing the fan motor and two fan brackets, then remove the fan motor.



6. Install a new fan motor in the reverse order of steps 1 through 5.

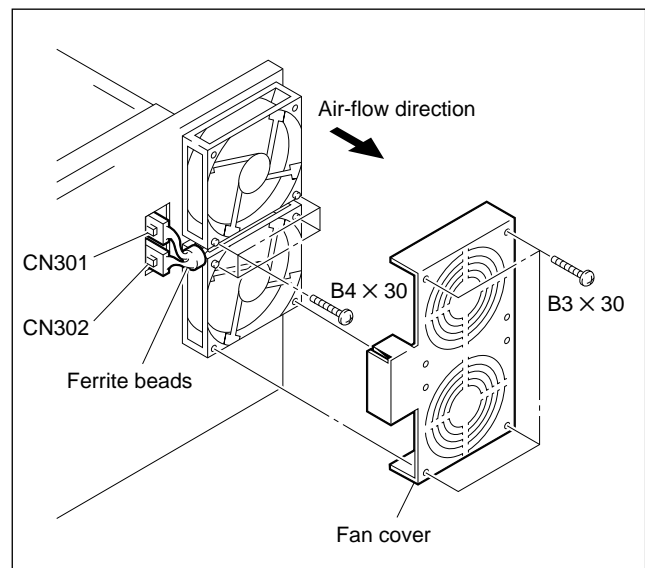
Note

When installing the fan motor, take care the direction of airflow.

Fans on the Rear Side Replacement

- Locking compound: 7-432-114-11

1. Turn the power off.
2. Unplug the power cord on the rear panel side.
3. Remove the four screws securing the fan cover.
4. Remove the ferrite beads holding the fan motor harness.
5. Disconnect the connector CN301 connected to the upper fan motor and CN302 connected to the lower fan motor.
6. Remove the four screws securing the two fan motors, then remove the fan motors.



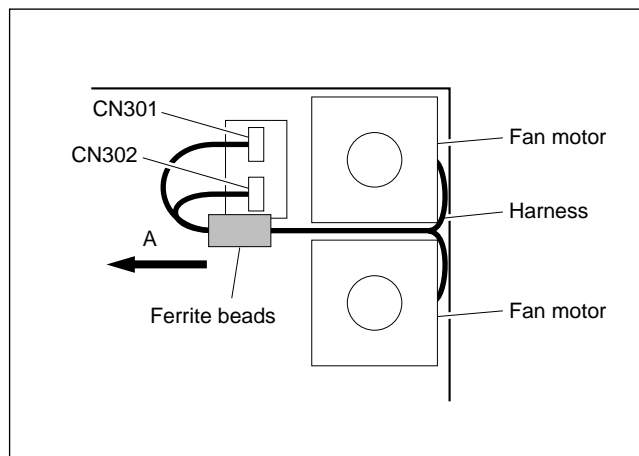
7. Pass the fan motor harness through the notch on the fan motor.
8. Install the new fan motors on the rear panel with the four screws.

Note

When installing the fan motor, take care the direction of airflow.

9. Apply locking compound to the four screws securing the fan motors.

10. Connect the two connectors CN301 and CN302 to the connectors on the rear panel, then insert the harness between the upper fan motor and the lower fan motor.
11. Pull the harness toward the arrow A, then hold it with the ferrite beads.



12. Install the fan cover on the rear panel with the four screws.
13. Apply locking compound to the four screws securing the fan cover.

2-5-3. Backup Battery (only DME-3000)

To store a setup data and a real-time clock, Ni-Cd battery is mounted on the CPU-114 board in DME-3000.

To charge the Ni-Cd battery sufficiently, turn on the power of DME-3000 for about ten hours. The sufficiently charged Ni-Cd battery enables data to be stored for about one week.

A Ni-Cd battery is not installed in DME-7000.

Note

The life of a Ni-Cd battery is about ten years. Replace the Ni-Cd battery after a lapse of ten years since this unit is installed or the battery is last replaced. (For the replacement procedure of the battery, refer to the Maintenance Manual Part 2.)

2-5-4. Capacitor for Data Backup (only DME-7000)

To store a setup data and a real-time clock, the large storage capacitor (4 Farad) is mounted on the CPU-196 board in DME-7000.

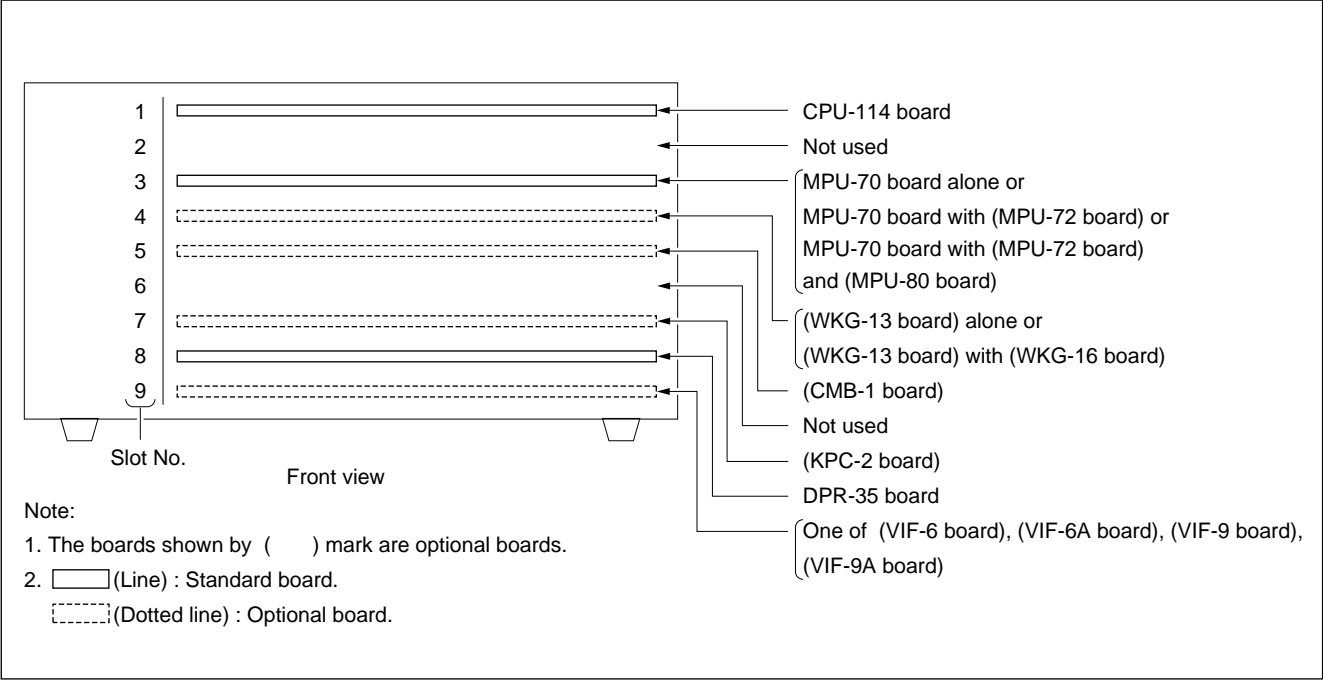
To charge the large storage capacitor sufficiently, turn on the power of DME-7000 for about one hour. The sufficiently charged large storage capacitor enables data to be stored for about one week.

A large storage capacitor is not installed in DME-3000.

2-6. Location of Printed Circuit Boards

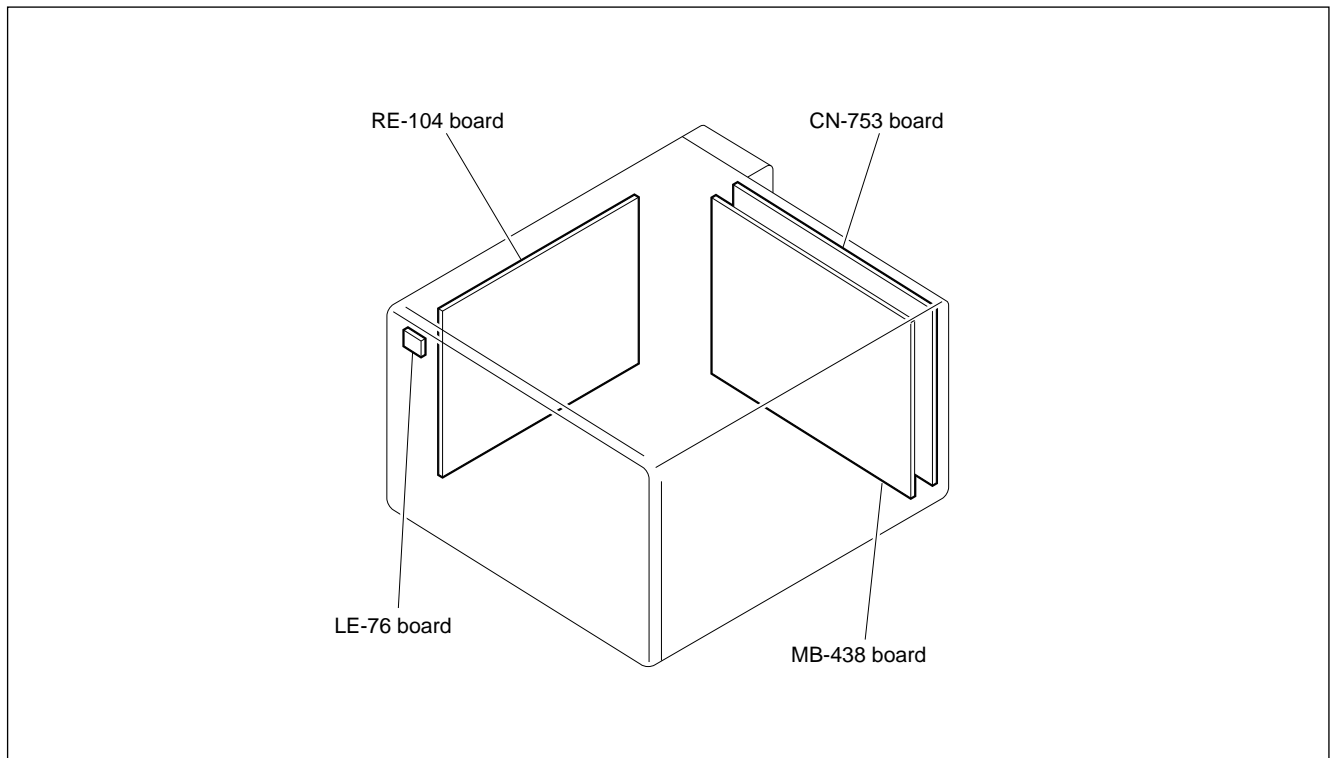
2-6-1. DME-3000

Plug-in Boards



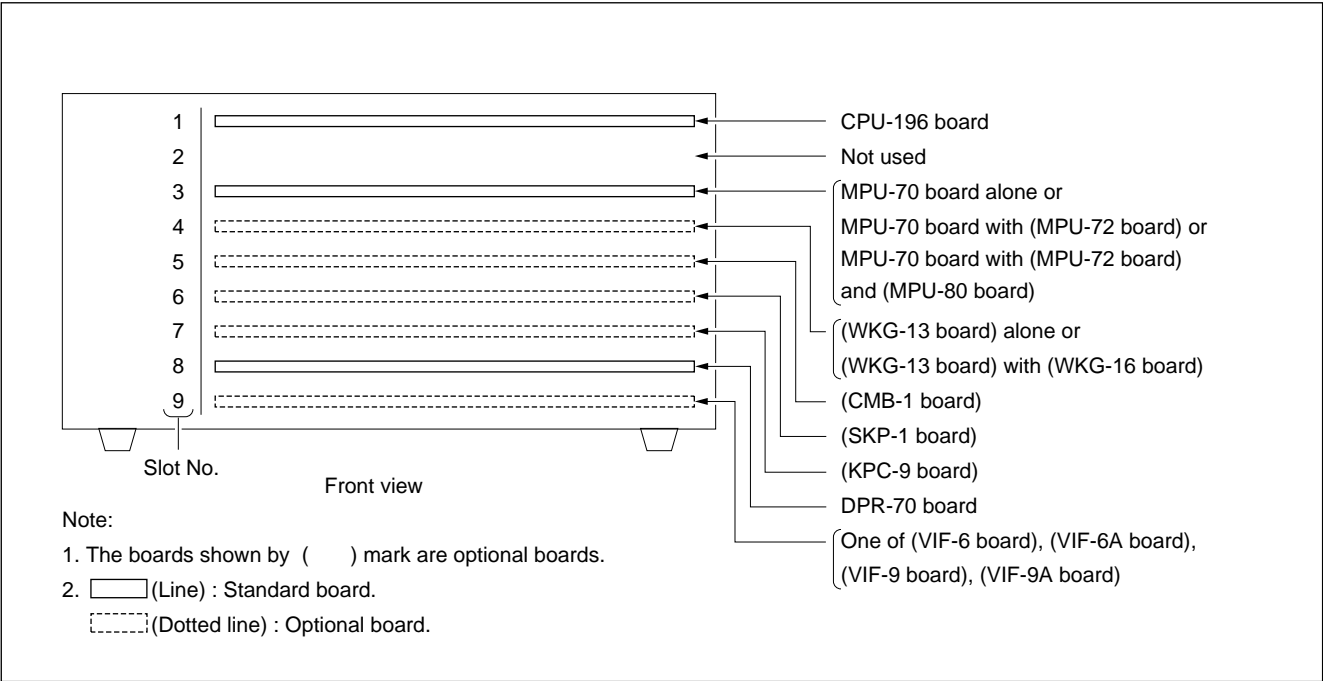
Slot No.	Standard board (Part No.)	Optional board (Model name)
1	CPU-114 (A-8275-400-A)	—
2	—	—
3	MPU-70 (A-8275-402-A)	MPU-72 (BKDM-3030) with MPU-80 (BKDM-7031)
4	—	WKG-13 (BKDM-3040) with WKG-16 (BKDM-7041)
5	—	CMB-1 (BKDM-3050)
6	—	—
7	—	KPC-2 (BKDM-3060)
8	DPR-35 (A-8275-401-A)	—
9	—	VIF-9A (BKDM-3020) VIF-6A (BKDM-3021) VIF-9 (BKDM-3022) VIF-6 (BKDM-3023)

Except Plug-in Boards



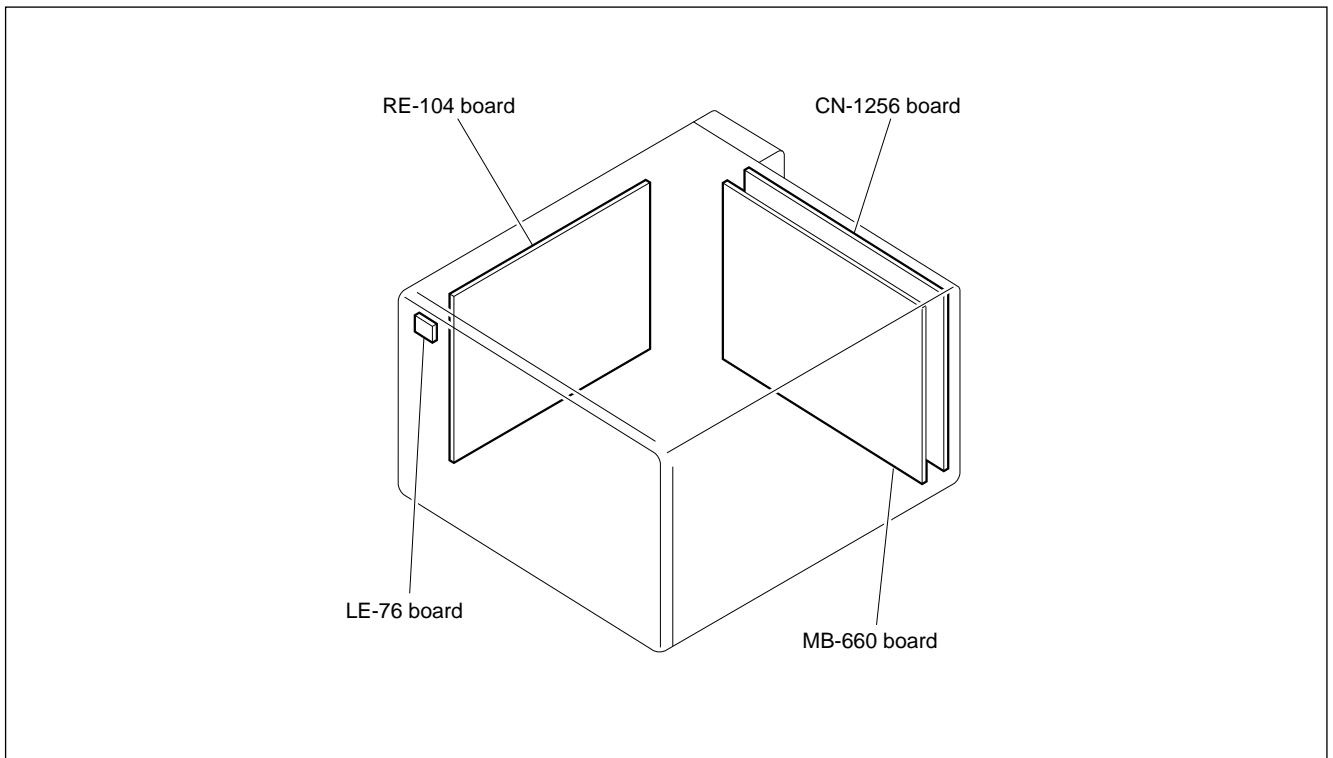
2-6-2. DME-7000

Plug-in Boards



Slot No.	Standard board (Part No.)	Optional board (Model name)
1	CPU-196 (A-8272-261-A)	—
2	—	—
3	MPU-70 (A-8275-402-A)	MPU-72 (BKDM-3030) with MPU-80 (BKDM-7031)
4	—	WKG-13 (BKDM-3040) with WKG-16 (BKDM-7041)
5	—	CMB-1 (BKDM-3050)
6	—	SKP-1 (BKDM-7070)
7	—	KPC-9 (BKDM-7060)
8	DPR-70 (A-8272-263-A)	—
9	—	VIF-9A (BKDM-3020) VIF-6A (BKDM-3021) VIF-9 (BKDM-3022) VIF-6 (BKDM-3023)

Except Plug-in Boards



2-7. Replacement of Plug-in Boards

This section explains the replacement procedure of the plug-in board.

For the board except the plug-in board, refer to the Maintenance Manual Part 2.

Note

When removing or installing boards, observe the following precautions.

Failure to observe these precautions may result in damage to the internal circuits.

- Before removing or inserting a board, always turn the power off.
- After inserting a board, and before turning on the power, make sure that the number on the board matches the number on the slot.

<Removing procedure>

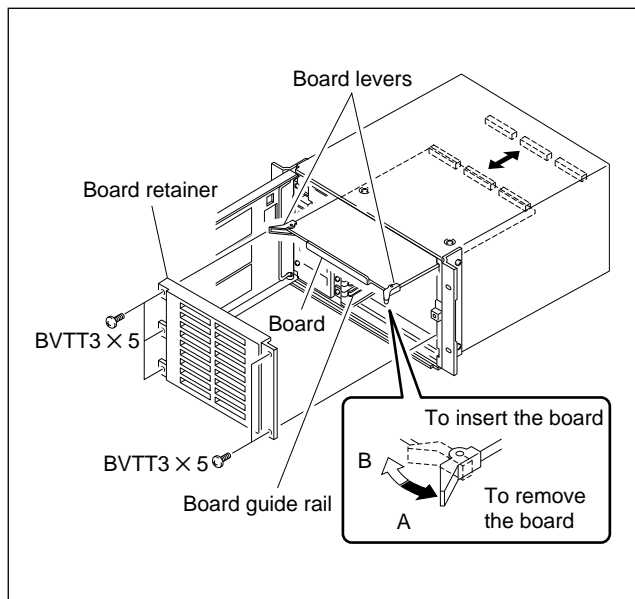
1. Turn the power off.
2. Open the front panel.
(Refer to steps 1 and 2 in section 2-2.)
3. Remove the five screws, then remove the board retainer.
4. Open the board levers in the direction of the arrow A.
5. Pull out the board levers and remove the board.

Note

Pull out the board with equal force for both board levers.

<Installing procedure>

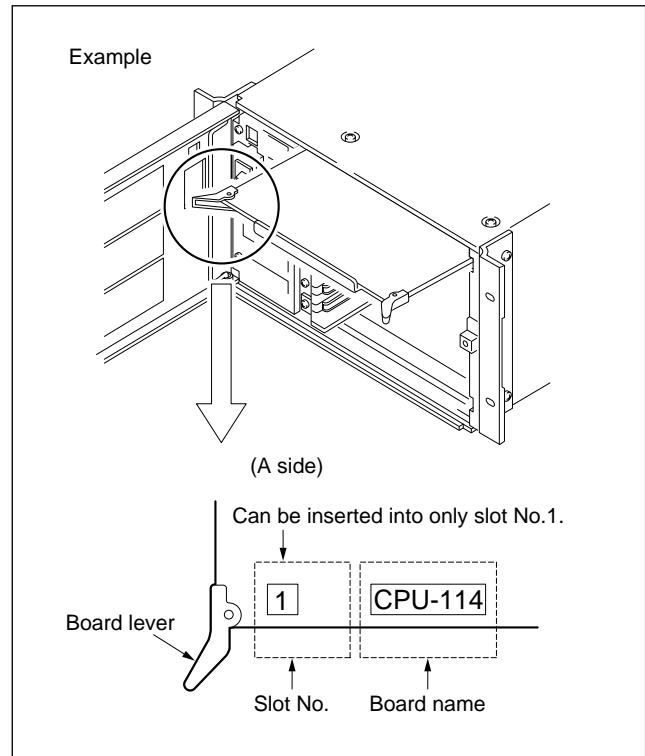
6. Insert the board into specified position of the unit along the board guide rail.
7. Close the board levers in the direction of the arrow B while pushing in the board.



8. Confirm that the number on the board matches the number on the slot.

Note

If the board is installed in an incorrect slot, a system error occurs. Then the system is not activated properly.



9. Confirm that the connectors on board is securely connected to the MB-438 board (DME-3000)/MB-660 board (DME-7000).
10. Install the board retainer with the five screws.
11. Confirm the secondary power supply voltage.
(Refer to section 1-11.)

Section 3

BKDM-3010 Service Overview

Note

The power of BKDM-3010 is supplied from DME-3000/7000.

When servicing BKDM-3010, turn off the power of DME-3000/7000.

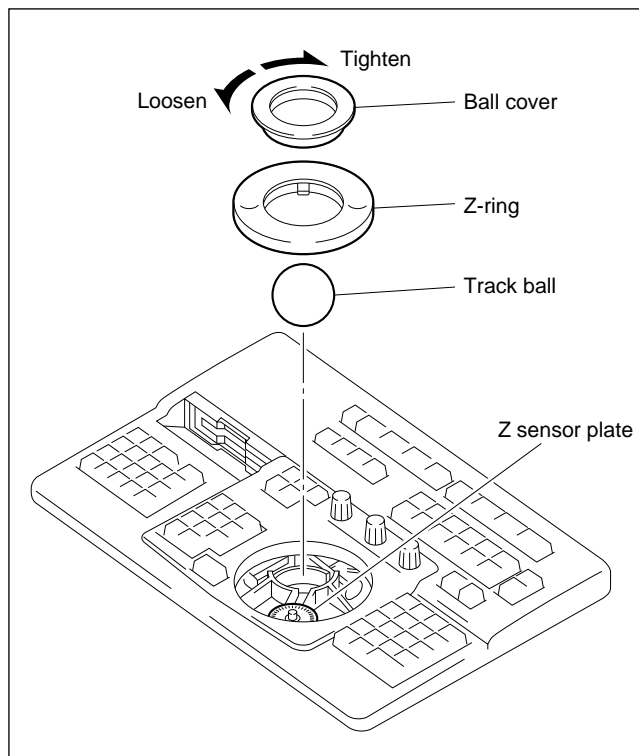
At this time, confirm that the LED of the buttons on BKDM-3010 goes out.

3-1. Cleaning of Track Ball

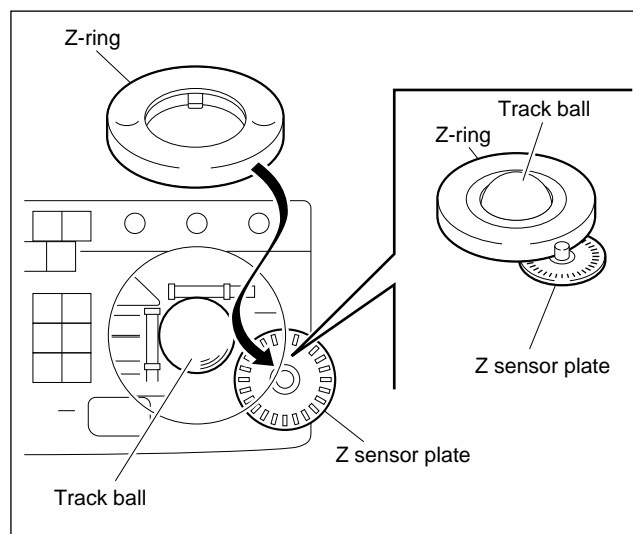
Clean the oil-stained track ball in the following procedure.

- Cleaning cloth: 3-184-527-01
- Cleaning fluid: 9-919-573-01

1. Turn the ball cover counterclockwise and loosen it, then remove.
2. Catch the Z-ring on a nail, raise it, then remove.
3. Remove the track ball.
4. Wipe the track ball with a cleaning cloth moistened with cleaning fluid.



5. Install the track ball.
6. Push in the Z-ring while pressing it against the Z sensor plate.
7. Turn the ball cover clockwise and tighten it.



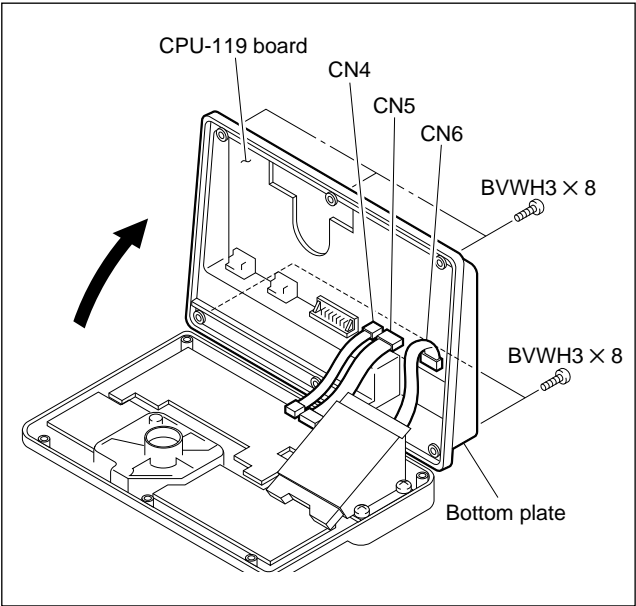
3-2. Removal of Bottom Plate

- 1. Turn BKDM-3010 upside down.
- 2. Remove the six screws shown in the figure, then open the bottom plate in the direction indicated by the arrow.

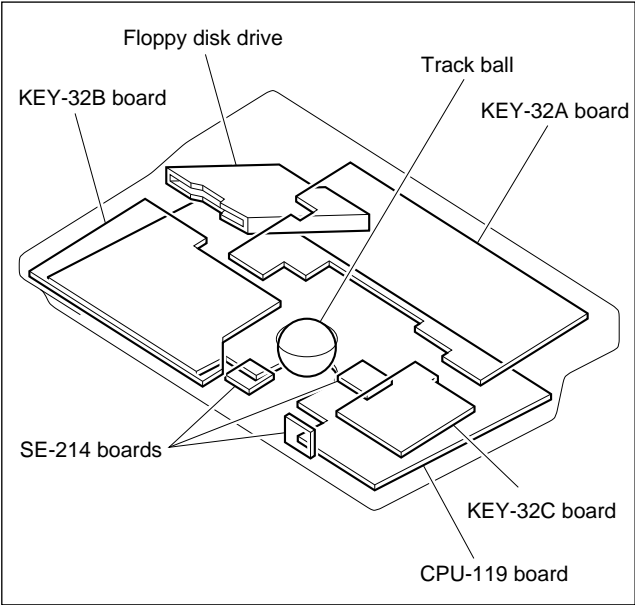
Note

Pay attention to the direction when opening the bottom panel.
Do not open it in the reverse direction. Connectors are caught on the bottom panel.

- 3. Disconnect the three connectors (CN4, CN5 and CN6) on the CPU-119 board, then remove the bottom plate.



3-3. Location of Main Parts

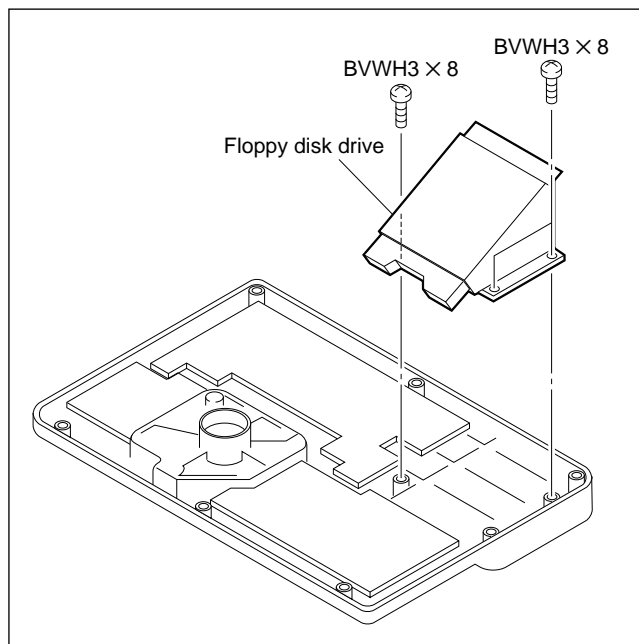


Part Name	Part No.
Floppy disk drive unit	1-467-692-11
CPU-119 Board	A-8275-385-A
KEY-32A Board	A-8275-382-A
KEY-32B Board	A-8275-383-A
KEY-32C Board	A-8275-384-A
SE-214 Board	1-649-905-11

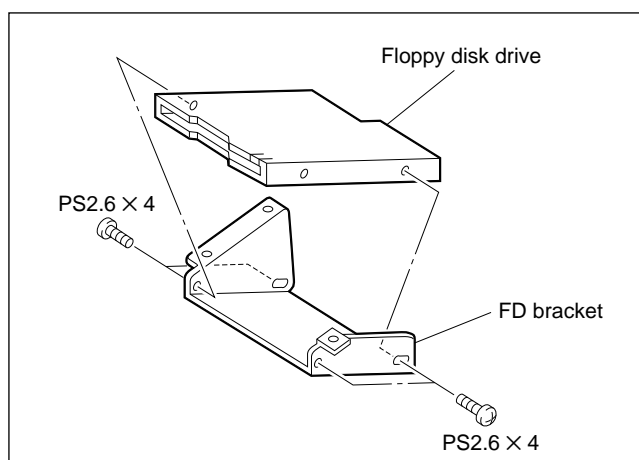
3-4. Replacement of Main Parts

3-4-1. Floppy Disk Drive

1. Remove the bottom plate. (Refer to the section 3-2.)
2. Remove the three screws securing the floppy disk drive and FD bracket.



3. Remove the four screws, then remove the floppy disk drive.

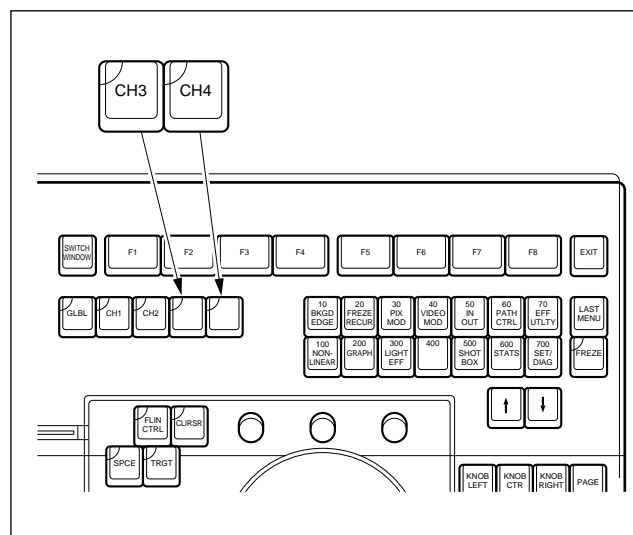


4. Install a new floppy disk drive in the reverse order of the steps 1 through 3.

3-4-2. Key Top

Only when using DME-7000

When using DME-7000, change the two key tops shown in the figure for the two supplied key tops with BZDM-7020 (Option).



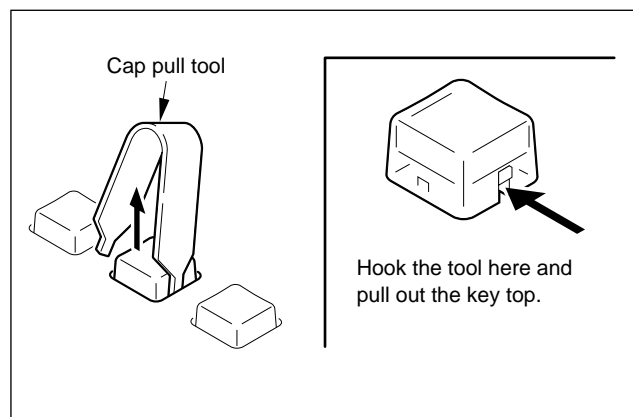
Cap pull tool

The key top can be extracted manually, but can be more easily removed using a cap pull tool.

- Cap pull tool: 3-179-054-01

<Use of tool>

1. Put the cap pull tool into the one side of the key top.
2. Pull out the key top by hooking the end of the tool.



3-4-3. Backup Battery

To store a part of setup data and a real-time clock, Ni-Cd batteries are installed on CPU-119 board in BKDM-3010. To charge the Ni-Cd batteries sufficiently, turn on the power of DME-3000/7000 about ten hours. The sufficiently charged Ni-Cd batteries enable data to be stored for about one week.

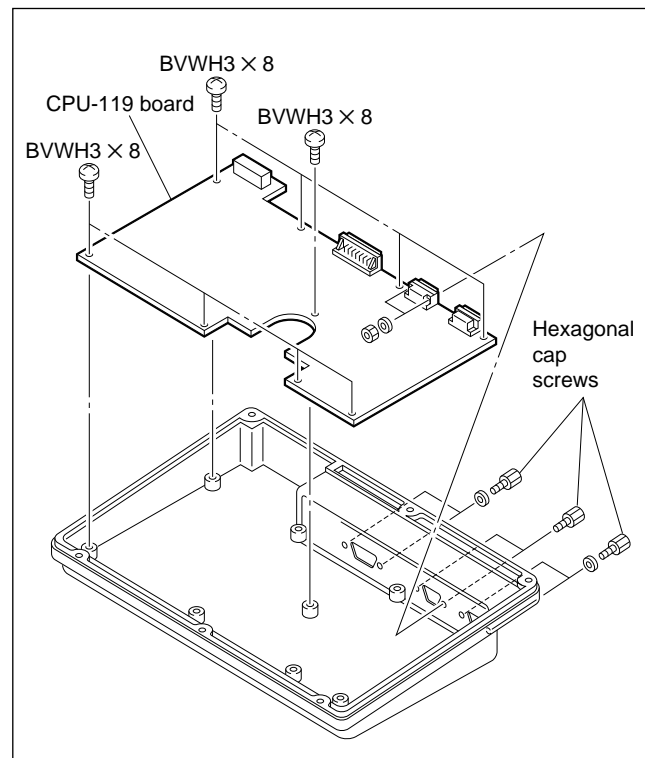
Note

The life of a Ni-Cd battery is about ten years. Replace the Ni-Cd battery after a lapse of ten years since this unit is installed or the battery is last replaced. (For the replacement procedure of the battery, refer to the Maintenance Manual Part 2.)

3-5. Replacement of Printed Circuit Boards

3-5-1. CPU-119 Board

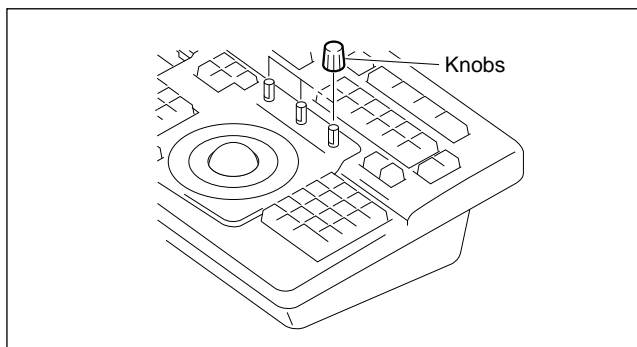
1. Remove the bottom plate.(Refer to the section 3-2.)
2. Remove the hexagonal cap screws securing the three D-SUB connectors at the rear of the bottom plate.
3. Remove the nine screws on the CPU-119 board, then remove the board.



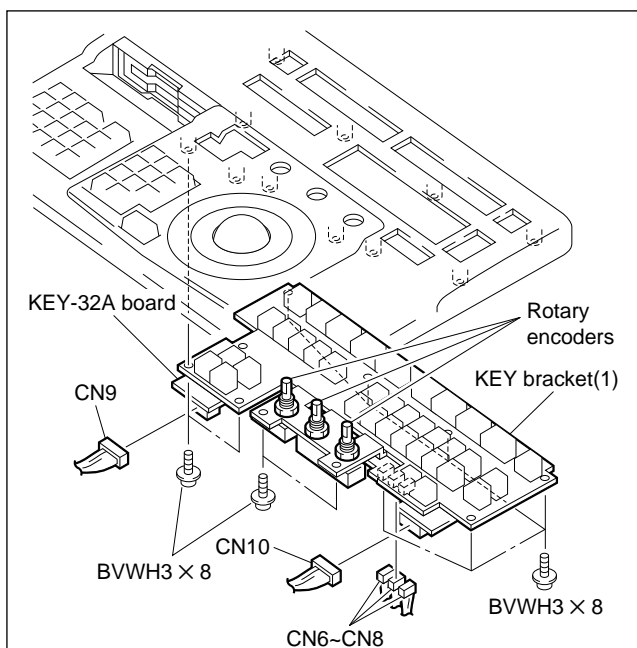
4. Install a new CPU-119 board in the reverse order of the steps 1 through 3.

3-5-2. KEY-32A Board

1. Remove the three knobs.



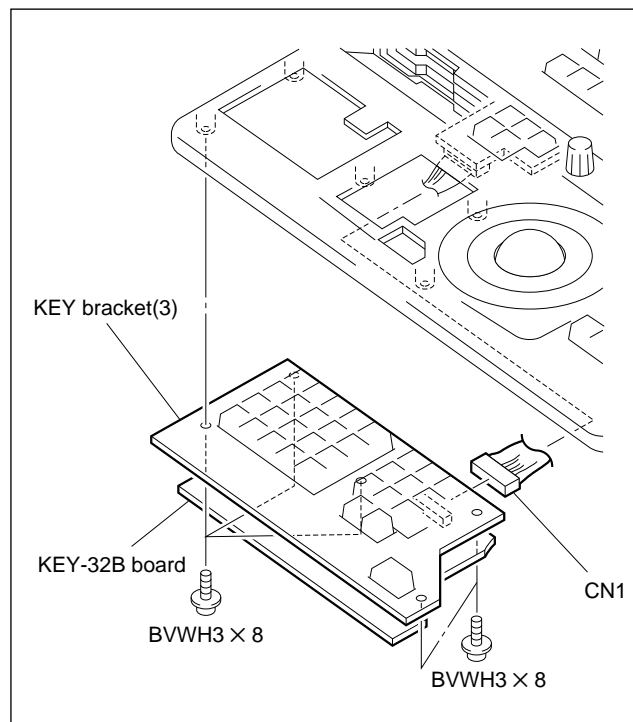
2. Remove the bottom plate. (Refer to the section 3-2.)
3. Remove the three screws securing the floppy disk drive and FD bracket. (Refer to the step 2 in section 3-4-1.)
4. Disconnect the five connectors (CN6 through CN10) on the KEY-32A board.
5. Remove the eleven screws on the KEY-32A board.
6. Remove the KEY-32A board together with the rotary encoder and the KEY bracket (1).



7. Install a new KEY-32A board in the reverse order of the steps 1 through 6.

3-5-3. KEY-32B Board

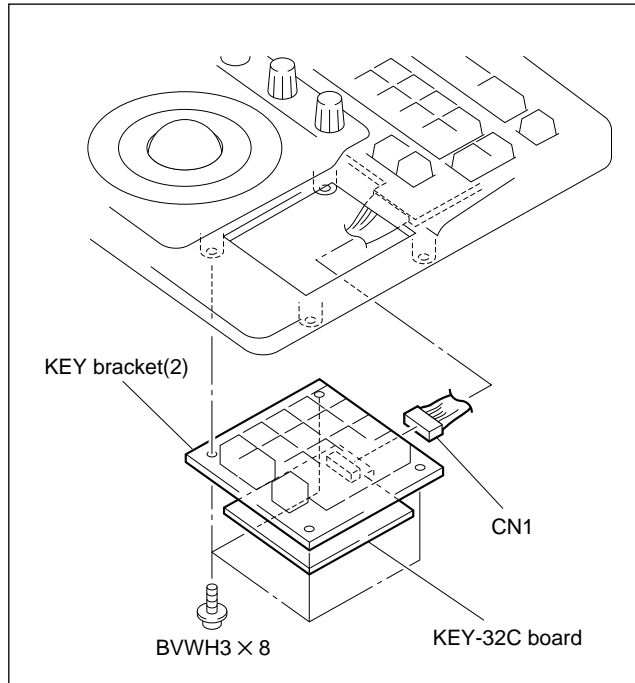
1. Remove the bottom plate. (Refer to the section 3-2.)
2. Disconnect the connector CN1 on the KEY-32B board.
3. Remove the five screws on the KEY-32B board.
4. Remove the KEY-32B board with the KEY bracket (3).



5. Install a new KEY-32B board in the reverse order of the steps 1 through 4.

3-5-4. KEY-32C Board

1. Remove the bottom plate. (Refer to the section 3-2.)
2. Disconnect the connector CN1 on the KEY-32C board.
3. Remove the four screws on the KEY-32C board.
4. Remove the KEY-32C board with the KEY bracket (2).

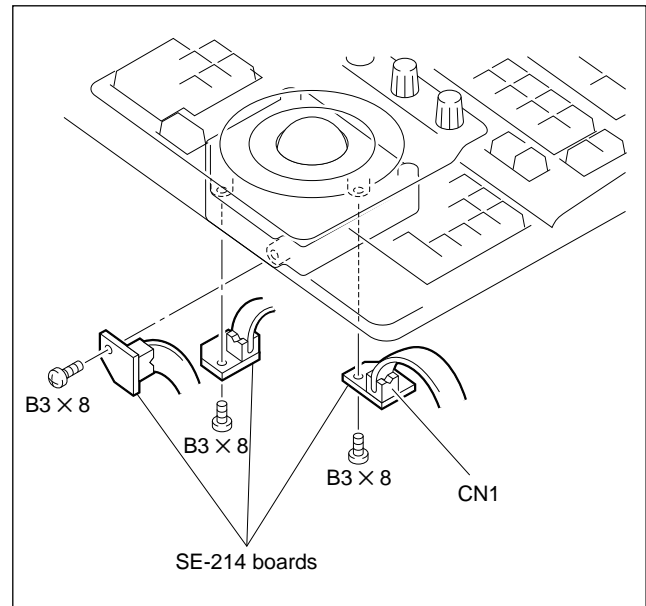


5. Install a new KEY-32C board in the reverse order of the steps 1 through 4.

3-5-5. SE-214 Board

Three SE-214 boards are used in BKDM-3010.

1. Remove the bottom plate. (Refer to the section 3-2.)
2. Disconnect the connector CN1 on the SE-214 board.
3. Remove a screw on the SE-214 board, then remove the SE-214 board.



4. Install a new SE-214 board in the reverse order of the steps 1 through 3.

Section 4

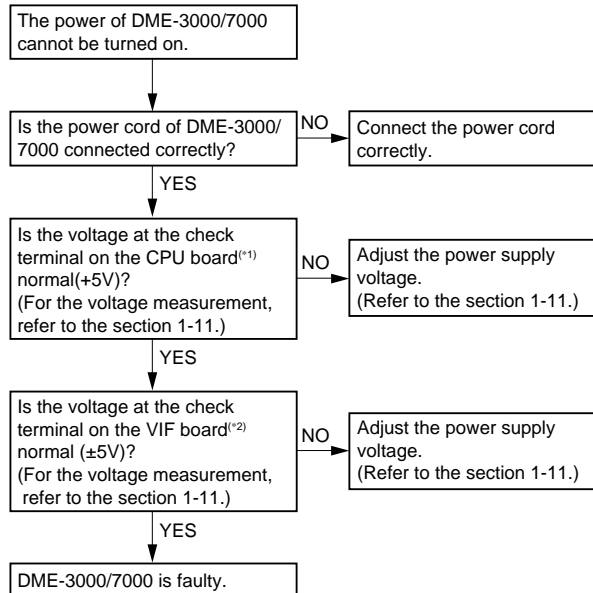
Trouble Shooting

4-1. Trouble Shooting

4-1-1. DME-3000/7000

The power cannot be turned on

Flow1



(*1) : CPU-114 board (DME-3000)/CPU-196 board (DME-7000)

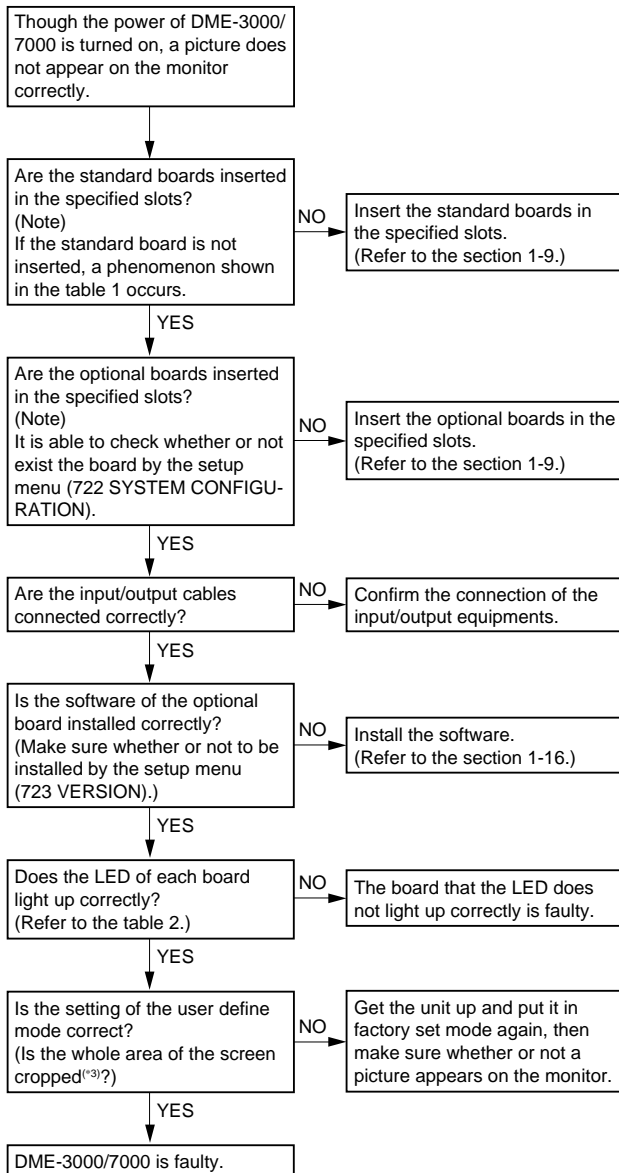
(*2) : VIF-6/9/6A/9A board

Note

When measuring the voltage, be careful not to touch the tip of the digital voltmeter connected to the check terminal to the board frame.

A picture does not appear on the monitor correctly

Flow2



(*) : The crop effect shrinks the frame so that some area of the picture is visible.

[Table 1 : Phenomenon if the standard board is not inserted]

Slot No.	Board name	Phenomenon
1	CPU-114 board (DME-3000) CPU-196 board (DME-7000)	A communication error occurred. The whole area of the screen with a single-color free runs because of no reference.
3	MPU-70 board	No picture appears on the monitor and the whole area of the screen is dark. And a picture does not move though it moves. If the BKGD (background) effect is executed, the whole area of the screen flashes.
8	DPR-35 board (DME-3000) DPR-70 board (DME-7000)	The whole area of the screen is green. The BKGD (background) and Non-linear effects can be operated.
9	VIF-6 board or VIF-9 board	No picture appears on the monitor and the whole area of the screen is green. And a picture does not move though it moves. The BKGD (background) and Non-linear effects cannot be operated.

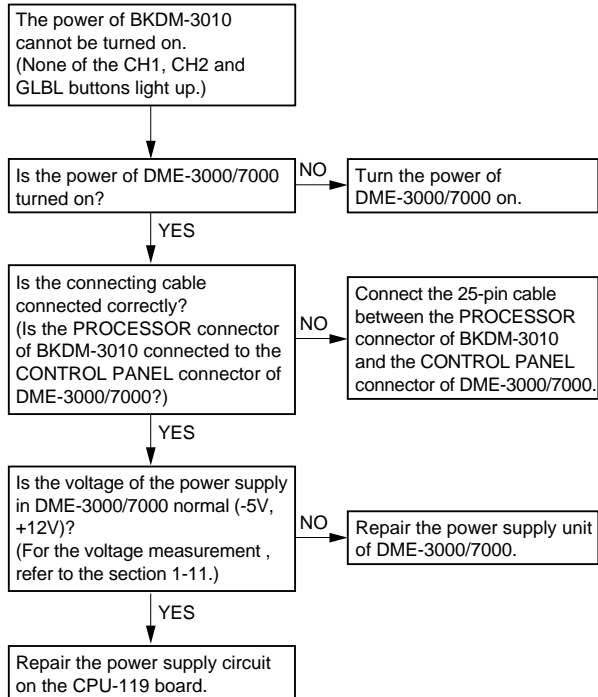
[Table 2: LED indication]

Slot No.	Board name	LED
1	CPU-114 board (DME-3000)	ND301 (F-1): If the RUN indicator displays "66", the board is normal.
	CPU-196 board (DME-7000)	D2 (E-1): If the RUN indicator lights up, the board is normal.
3	MPU-72 board	D901 (D-7): If the RUN indicator lights up, the board is normal. D902 (D-7): If the VD indicator lights up, the board is normal.
4	WKG-13 board	D100 (E-1): If the CPU RUN indicator lights up, the board is normal. D101 (E-1): If the GDC RUN indicator lights up, the board is normal.

4-1-2. BKDM-3010

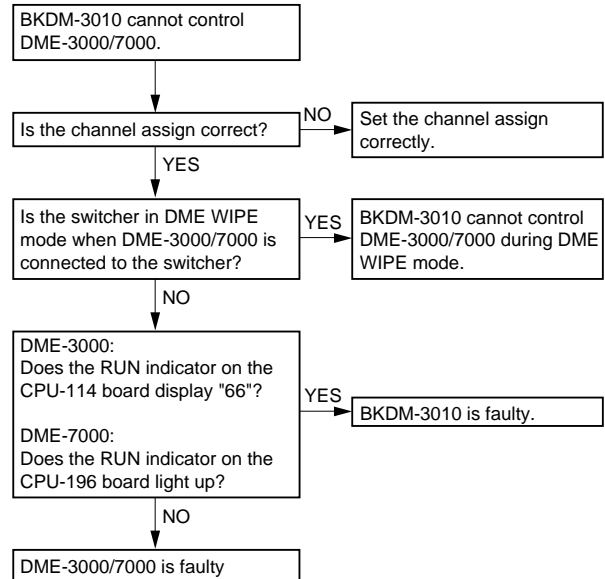
The power cannot be turned on

Flow3



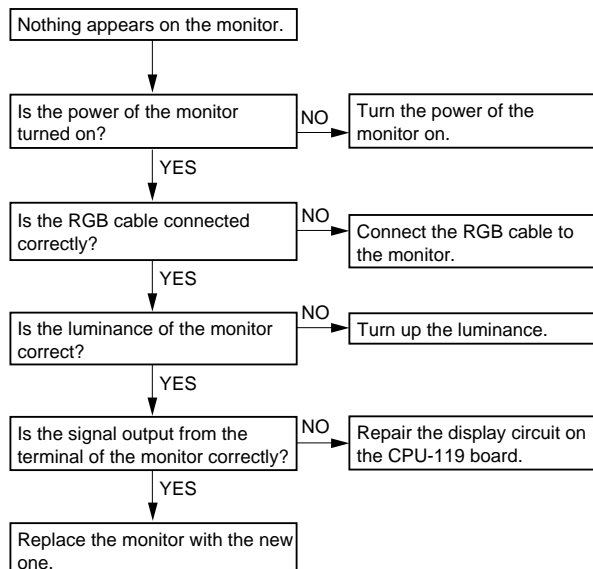
BKDM-3010 cannot control DME-3000/7000

Flow5



Nothing appears on the monitor

Flow4



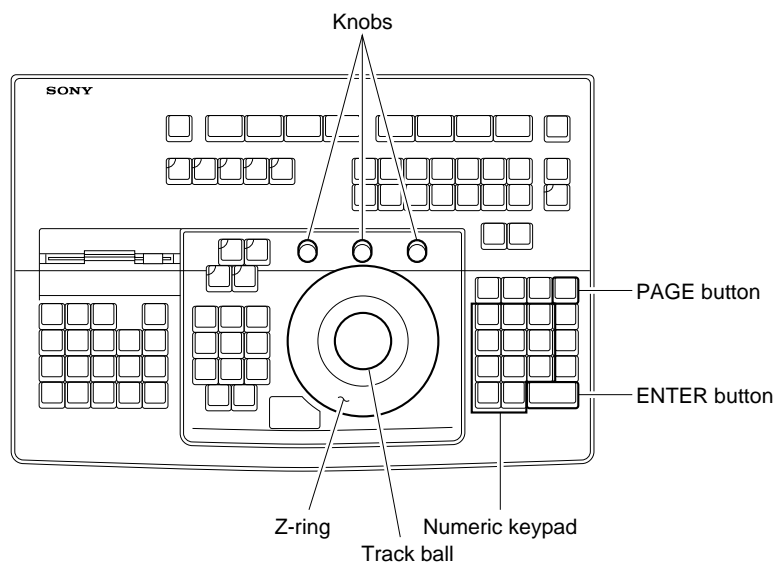
4-2. Self Diagnostics

4-2-1. BKDM-3010 (Menu 804 page)

Menu 804 (DIAGNOSIS CONTROL PANEL)

1. Starting of the Menu 804

Press the PAGE button, and enter 804 by the numeric keypad. Then press the ENTER button.
Start the menu 804.



2. Check items

(1) Button check

Press the button on the control panel, and confirm that the color of the corresponding display on the monitor changes.

(2) LED of the button check

Press the button with LED on the control panel, confirm that the LED lights up.

For the buttons with two-color LED (GLBL, CH1, CH2, CH3, CH4), confirm that the LED lights green and red alternately each time these buttons are pressed.

(3) Knob check

Turn the knob clockwise, and confirm that the corresponding display on the monitor moves to the right.

Turn the knob counterclockwise, and confirm that the corresponding display on the monitor moves to the left.

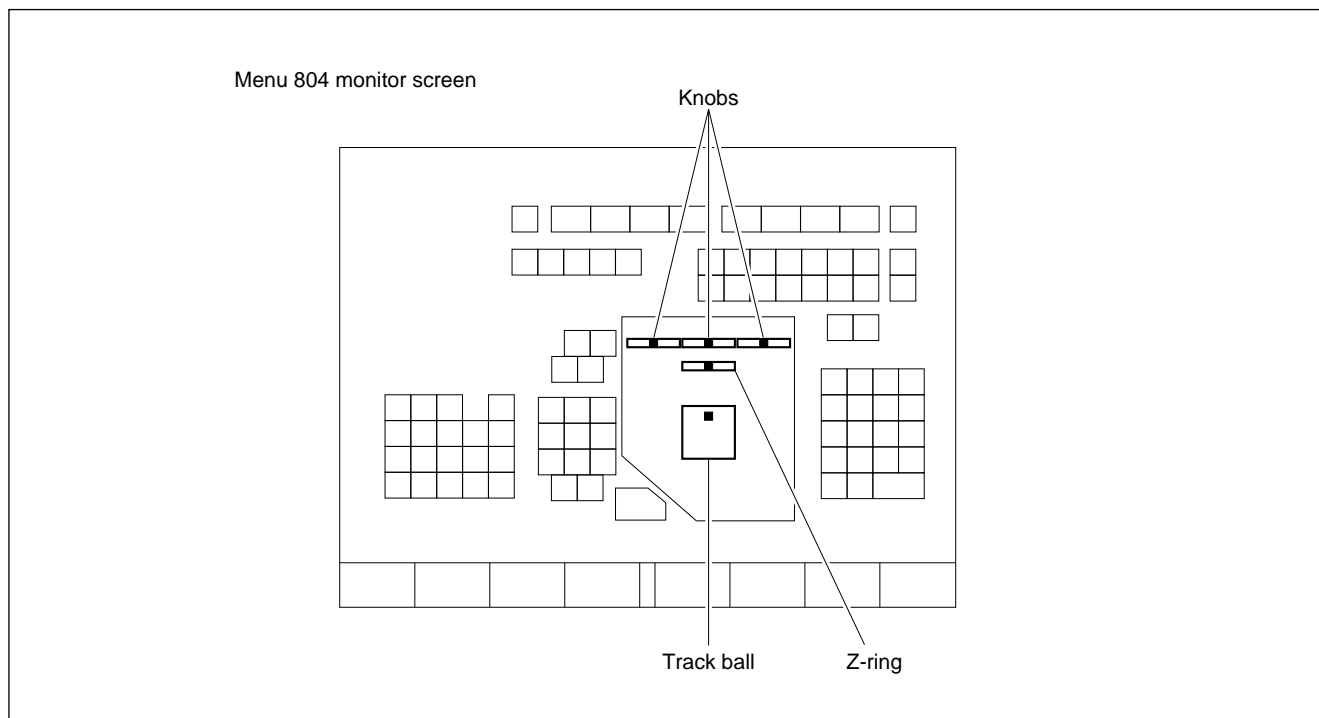
(4) Track ball check

Move the track ball in the right and left, up and down, and confirm that the corresponding display on the monitor moves to the same directions.

(5) Z-ring check

Turn the Z-ring clockwise, and confirm that the corresponding display on the monitor moves to the right.

Turn the Z-ring counterclockwise, and confirm that the corresponding display on the monitor moves to the left.



3. Ending of the menu 804

Reset the control panel BKDM-3010. (Refer to the section 1-15.)



Section 5
Overall Block Diagrams

5-1. Circuit Function of Printed Circuit Boards

5-1-1. DME-3000

Board Name	Circuit Function
CMB-1(BKDM-3050)	Combiner, lighting and Z recursive
CN-753	Rear panel
CPU-114	System control and communication
DPR-35	Video memory
KPC-2(BKDM-3060)	Key memory and recursive
LE-76	Power indicator
MB-438	Mother board
MPU-70	3D Linear address generator
MPU-72(BKDM-3030)	Non-linear address generator
MPU-80(BKDM-7031)	Digital sparkle generator
RE-104	Power supply
VIF-6(BKDM-3023)	Component digital/analog input/output
VIF-6A(BKDM-3021)	Component digital input/output
VIF-9(BKDM-3022)	Composite digital/analog input/output
VIF-9A(BKDM-3020)	Composite digital input/output
WKG-13(BKDM-3040)	Wipe pattern generator and graphics generator
WKG-16(BKDM-7041)	Digital sketch generator

5-1-2. DME-7000

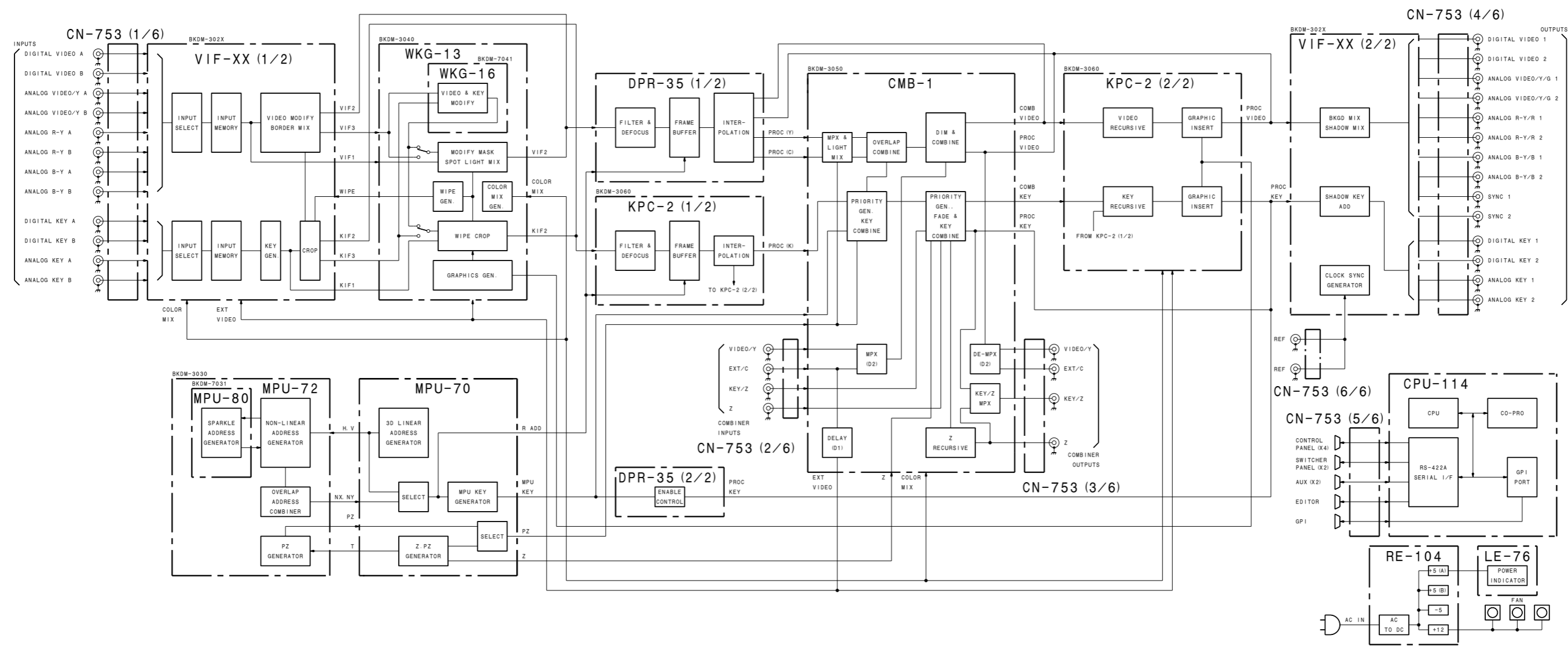
Board Name	Circuit Function
CMB-1(BKDM-3050)	Combiner, lighting and Z recursive
CN-1256	Rear panel
CPU-196	System control and communication
DPR-70	Video memory
KPC-9(BKDM-7060)	Key memory and recursive
LE-76	Power indicator
MB-660	Mother board
MPU-70	3D Linear address generator
MPU-72(BKDM-3030)	Non-linear address generator
MPU-80(BKDM-7031)	Digital sparkle generator
RE-104	Power supply
SKP-1(BKDM-7070)	Advanced Shadow generator
VIF-6(BKDM-3023)	Component digital/analog input/output
VIF-6A(BKDM-3021)	Component digital input/output
VIF-9(BKDM-3022)	Composite digital/analog input/output
VIF-9A(BKDM-3020)	Composite digital input/output
WKG-13(BKDM-3040)	Wipe pattern generator and graphics generator
WKG-16(BKDM-7041)	Digital sketch generator

5-1-3. BKDM-3010

Board Name	Circuit Function
CPU-119	System control and communication display
KEY-32A	Key switch
KEY-32B	Key switch
KEY-32C	Key switch
SE-214	Photointerrupter

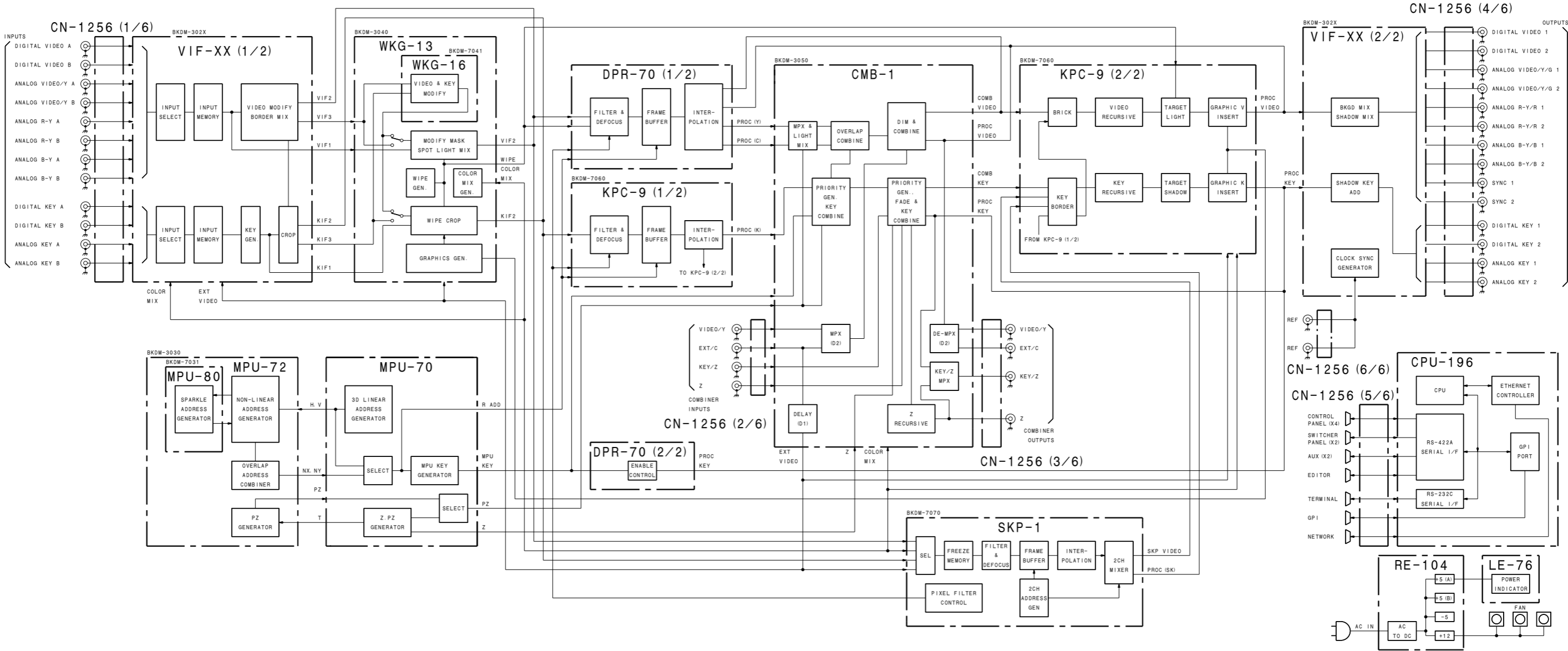
5-2. Overall Block

5-2-1. DME-3000



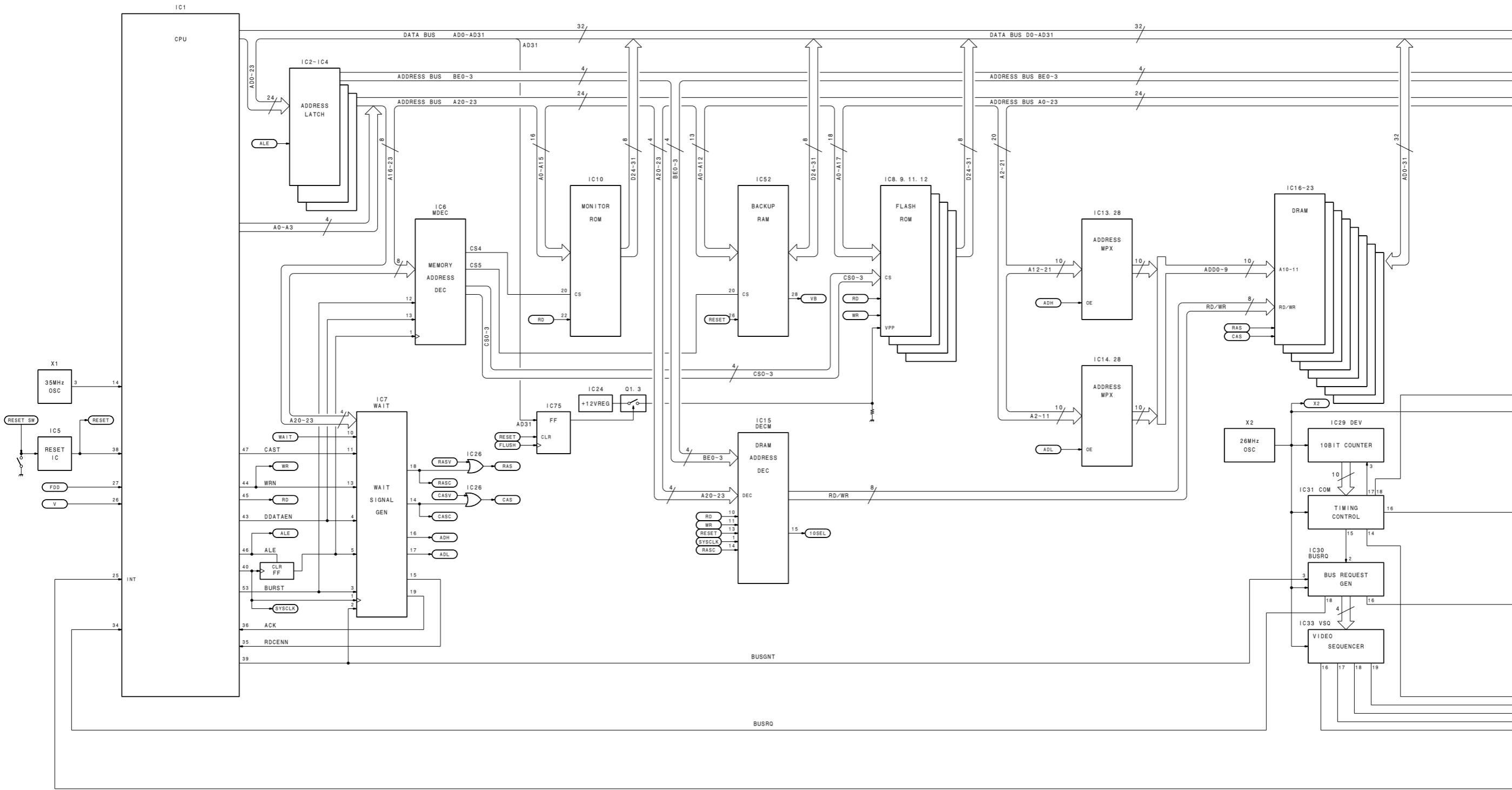
OVERALL BLOCK
DME-3000

5-2-2. DME-7000



OVERALL BLOCK
DME-7000

5-2-3. BKDM-3010 (CPU-119 board)





このマニュアルに記載されている事柄の著作権は当社にあり、説明内容は機器購入者の使用を目的としています。

従って、当社の許可なしに無断で複写したり、説明内容(操作、保守等)と異なる目的で本マニュアルを使用することを禁止します。

The material contained in this manual consists of information that is the property of Sony Corporation and is intended solely for use by the purchasers of the equipment described in this manual.

Sony Corporation expressly prohibits the duplication of any portion of this manual or the use thereof for any purpose other than the operation or maintenance of the equipment described in this manual without the express written permission of Sony Corporation.

Le matériel contenu dans ce manuel consiste en informations qui sont la propriété de Sony Corporation et sont destinées exclusivement à l'usage des acquéreurs de l'équipement décrit dans ce manuel.

Sony Corporation interdit formellement la copie de quelque partie que ce soit de ce manuel ou son emploi pour tout autre but que des opérations ou entretiens de l'équipement à moins d'une permission écrite de Sony Corporation.

Das in dieser Anleitung enthaltene Material besteht aus Informationen, die Eigentum der Sony Corporation sind, und ausschließlich zum Gebrauch durch den Käufer der in dieser Anleitung beschriebenen Ausrüstung bestimmt sind.

Die Sony Corporation untersagt ausdrücklich die Vervielfältigung jeglicher Teile dieser Anleitung oder den Gebrauch derselben für irgendeinen anderen Zweck als die Bedienung oder Wartung der in dieser Anleitung beschriebenen Ausrüstung ohne ausdrückliche schriftliche Erlaubnis der Sony Corporation.

SAFETY CHECK-OUT

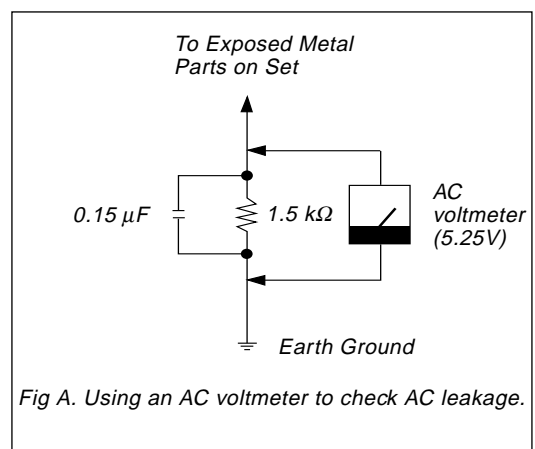
After correcting the original service problem, perform the following safety checks before releasing the set to the customer :

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5 mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 5.25 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 20 V AC range are suitable. (See Fig. A)



DME-3000 (SY)
DME-7000 (SY)
BKDM-3010 (WW) J, E
3-190-061-01 (1)

Sony Corporation
Broadcast Products Company

Printed in Japan
1996. 3 08
© 1995
Published by Broadcast Products Company